

# FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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## Flight.

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### TO OUR READERS.


#### The Supply of "FLIGHT." Important Notice.

Order "FLIGHT" to be either delivered or reserved for you regularly.

As the demand for "FLIGHT" is so great each week, it is of the utmost importance that readers should place their orders *firmly* for copies of "FLIGHT" at the bookstalls, their newsagents, or direct from the publishers, at 44, St. Martin's Lane, W.C., if they wish to secure a copy every week and avoid disappointment. The stringent Government restrictions in regard to the supply of printing paper necessitates this precaution in order that only actual numbers required are printed, and all wastage by unsold copies may thereby be reduced to a minimum, if not eliminated.

THE PUBLISHERS.

### EDITORIAL COMMENT.

T was a very near thing to a defeat for the Government last Wednesday when practically the entire sitting was given over to the discussion of the air defences of this country. Although the question raised by Mr. Joynson-Hicks embraced the whole structure of the Air Services, by the time the criticisms and recriminations from all parts of the House had been given vent to, there remained a strong feeling that, as we suggested last week would be

the case, the main issue had been missed, as the discussion was largely occupied with, and directed at, the ineptitude of the Government in the past and the want of provision for adequate protection against Zeppelin raids over this country. There were exceptions, but there is little doubt that in the minds of most it was the recent visit of the Hun raiders to the Midlands that was uppermost. That the mover of the resolution did not intend to confine his criticism to this side of the air problem is obvious from the wording of his amendment to the King's Speech, which read as follows: "That this House humbly regrets that no mention is made in the Gracious Speech from the Throne of any proposals for placing the Air Services of the country on a firmer and stronger basis."

Mr. Joynson-Hicks made an admirable speech, which, being shorn of most of the somewhat wild statements upon which at other times he has sought to heckle the Government, carried the House with him, and obtained him very sympathetic attention. And from the effect upon the public generally there is no doubt the thrashing out of the air defence question has taught a most salutary lesson to the whole nation, as to the inadequate state of our powers of defence and offence in the air. Such very full reports of the proceedings in Parliament have appeared in the daily press throughout the country that it is rendered unnecessary for us to devote the very large amount of space in our columns which would be required to record the many and in cases unduly verbose speeches of those who took part in the debate. Moreover, for any one who wishes to go still further, and to

have a verbatim report of the whole proceedings, there is the official Hansard publication with all the oft-repeated "our right hon. and learned friend, the member for . . . , " fully set out about every dozen lines or so.

The main points which emerged in the reply of the Under-Secretary for War included the information that as from February 16th last the entire control of the defences had been transferred to the War Office; that the Navy will deal with hostile aircraft on their way to this country, and the Army with those which reach these shores; the Army being responsible for all the defensive arrangements on land, together with the necessary aeroplanes and flying stations; the Navy performing similar duties on sea. Most important of all was the announcement that a Standing Joint Naval and Military Committee will co-ordinate questions of supply of material and design for the two Air Services. This is a move in the right direction, and not before it was wanted. It is a long way off the creation of an Air Ministry, but it is a very healthy sign that opinion in the country is forcing upon those holding the reins of office the insistent demand for an Air Minister, and ultimately a separate third service to deal with the ever-growing problem of how to keep Britain at the top in commanding the air. It is only by the most generous treatment of the aviation industry and engineering firms who have thrown in their help to the common end, that the Government can hope to obtain all they require in machines and engines. The question of pilots is upon another plane, but is one which requires handling by a responsible head as firmly and systematically as the fostering of the trade for the supply of the more material requirements of the Services. Under the existing *régime* it is more than doubtful if this is being done. What is many people's business generally results in being nobody's concern. We are not supporting the wholesale charges, almost approaching infamy, which have been levelled at those who have so far been responsible for muddling along over the Air Services. We realise in a measure the multiplicity of affairs of an abnormal nature which have had to be straightened out under conditions which neither this country nor the world have ever before encountered. The task has been so phenomenal that it would be unreasonable to suppose that the most intimate attention could be accorded, by the Ministry as a whole, to any one section or special branch of the vast war machinery, to the possible detriment of some other section of vital necessity. Therefore it is that we, having supreme confidence and belief in the paramount importance of our Air Services for the welfare and success of Britain and her Allies in this war and in the future, have advocated the creation of an Air Minister. By such an appointment the air problem would stand a fair chance, by direct study and expert handling, of meeting the demands which are being made by all thinking men for expansion in this direction. As it is, the insistent calls of manufacturers and the *personnel* of the Services, are either ignored or so

whittled down, that this arm as a real fighting and offensive unit is very materially nullified. On Mr. Bonar Law must rest the credit of having saved the Government from an ugly quandary, when it looked uncommonly like a division being forced upon the House. By his promise of an opportunity in the near future for a further discussion upon the subject, Mr. Joynton-Hicks was induced to hold his hand and save an awkward position. But Mr. Bonar Law was not at one with his facts, and whether from not himself understanding the actual state of affairs existing, or whether he was sufficiently anxious for the safety of the Government as to lead him to place a different interpretation upon his facts than he was entitled to, is not for us to say, but it is highly suggestive of the loose handling by responsible men of facts that prevails when any particular object is to be obtained, that he should have set forth the following justification for some of the shortcomings in the supply of our much-needed aircraft. Thus Mr. Bonar Law :—

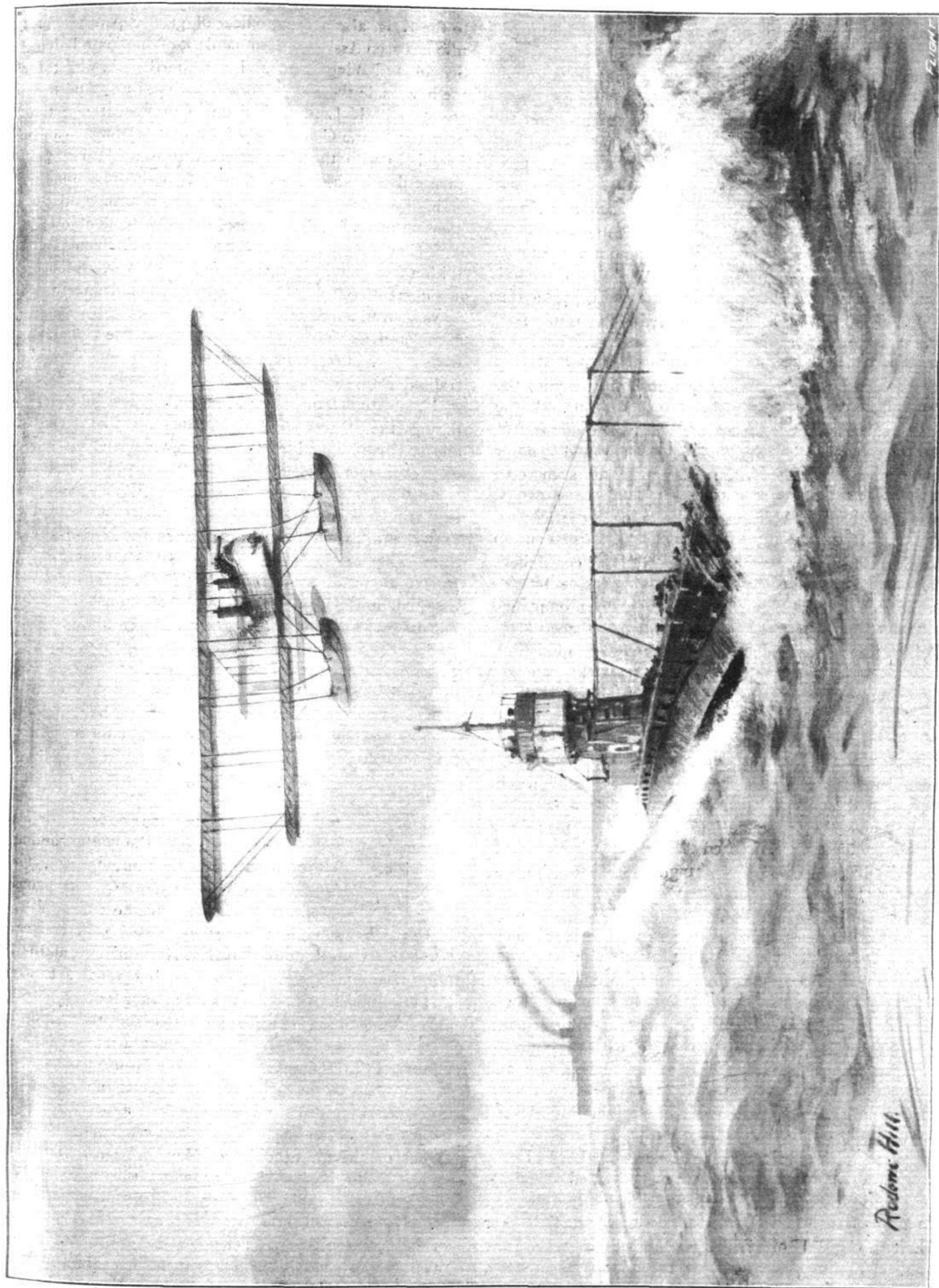
"The greatest need is engines. I had an opportunity recently of discussing the question of the supply of engines with the head of a firm. . . . He said that, owing to the dearth of labour and the difficulty of getting labour, he saw no prospect whatever of being able to give a single other engine in addition to those he was giving now, within any reasonable period."

Now, coming from such a source, it would have been unseemly and ungracious to have suggested that this statement was far from being the real position. Yet it now transpires that the reading put into the remarks of the manufacturer has been woefully misunderstood—to say the least. The manufacturer quoted has very speedily given *his* version of how he sees the position. He writes as follows :—

"When I made this statement, I naturally thought that Mr. Bonar Law would understand that I was referring to the limited skilled labour which the Government find themselves able to let our works have. The uses to which skilled labour can be applied are decided by the Government, not by the manufacturer. Already, I believe, the Government have wisely recalled from the ranks in France a number of skilled mechanics, in order that they may work in munitions factories in this kingdom, and their places in the ranks have been taken by unskilled men. This system will, presumably, be pressed to its utmost limits.

"The substitution of light railways for the countless motor vehicles which are now being used for transport behind the British lines in France would doubtless release many thousands of men who could assist in the manufacture of aero engines in this country. Mr. Bonar Law, who is a keen business man, no doubt is pressing his colleagues on the War Council to bring about this and other desirable changes. The position at the present moment at our works is that, *if the Government could direct fifty more skilled hands into our works and could give us preferential delivery of five machine tools, we could double our present output of engines.*" [The italics are ours.]





SEAPLANE AND SUBMARINE.—A study. From an original picture by Roderic Hill.

Just consider for one moment how different might have been the position of the supply of aircraft had we long since had a single control of the Services, even if only for the supply of *matériel*. It would have been the business of and the paramount duty of that Air Minister to know these requirements, and to see that they were made possible to fulfil. By calling for the necessary grants from the Treasury the first difficulties would be surmounted, and by their concentrating on the organisation of the skilled workers, and the supply of the necessary machine tools, the rest of the obstacles to bringing about the all-important supply would have disappeared. As it is, in the view of the full Cabinet, much more important objects precede the attention for any such suggestions, with the result that the crying need of the moment is shelved, simply by reason of there not being time to delve sufficiently deeply into the reasons for, and the means of, satisfying the demand for more aircraft of some particular type. In the words of the Under-Secretary for War, when referring to the surprise of the Midland raids, it would "never cross the minds" of the Cabinet that such contraptions as aircraft could ever achieve anything worth bothering about except at some more leisured period. Hence the utter weakness of the defence put up by the Under-Secretary for War. Nothing could have been much more puerile, when considered side by side with the vital consequences attaching to prompt and adequate handling of the position as it has shaped itself. It is, however, something to have drawn such admissions of want of foresight and confessions that things might have been different, as were forthcoming in the reply by Mr. Tennant. A further point gained is the recognition of the friction which has existed between the two Air Services. Nothing could be more reprehensible than the existence of such a state of affairs, and this fact should in itself be sufficient to justify a combination under one supreme head, so that so great a scandal could be scotched before it takes hold of the Air Services with its strangling tentacles, in like manner to the state of affairs existing between the Senior Service and the W.O. That such things can be and efficiency still exist in these stressing times, as it undoubtedly does, is at least a credit to the sterling quality of the Briton individually when faced with a great crisis. The upshot of the indictment in the House should be a big move to the desired end of supremacy. Should Lord Derby be in charge of the promised Standing Joint Committee to co-ordinate the men and material side of the Naval and Military Services, as is highly probable, a considerable weight should be lifted from the fears of the nation lest an energetic construction policy will not be followed. Lord Derby has proved himself a man of vast energy and organising ability, combined with a phenomenal amount of tact, and would appear to be well fitted for so onerous a job. For Director-General of Military Aeronautics under the Joint Committee, there is General Sir David Henderson, who is both a practical flying man and a soldier of experience, and who has been in charge of military aviation

since 1913; or, again, Brigadier-Gen. Trenchard, A.D.C. to the King, also a flying officer of great experience, and who has been Assistant Commandant of the Central Flying School and Wing Commander of the R.F.C., whilst for the naval side there is Admiral Vaughan-Lee. And there are others. If Lord Sydenham, who was at one time Secretary of the Committee of Imperial Defence, can be joined up with the Committee, very valuable and well-balanced help should result, whilst there are a number of highly efficient organisers and practical men, like, to mention merely one, the present Superintendent of Aircraft Construction, Commodore Murray F. Sueter, C.B. With a free hand, the changes for the better, which the new committee, if properly constituted, should make, would be very swiftly apparent, and we shall anxiously await the formal announcement of details. What the Committee have before them to set right may in a small way be realised from the statement by Capt. Bennett-Goldney, M.P., in the House on Monday, of the happenings during the Dover raid in January. The facts, as alleged by him, and published elsewhere in this issue, were even more disquieting than those which emerged from the narrative of Mr. J. C. Percy, J.P., as published in "FLIGHT." As apparently no Minister who was able to deal with the subject was present in the House at the time of Captain Bennett-Goldney's indictment—made by way of a protest against the Under-Secretary for War's assertion during last week's debate, that our machines and officers were ready to repel the attack—we must "wait and see" what explanation may be forthcoming in reply to so unsatisfactory a state of affairs. If correct, one of the first tasks which the executive of the New Committee should set themselves to see should be that such want of alertness and organisation should for the future be impossible.

Mr. Pemberton-Billing to Try Again. "P.-B." has not had long to wait for his second attempt to join the happy band at Westminster. Hardly time, in fact, for him to have recuperated from his strenuous efforts at Mile End. We heartily applaud his decision to stand for the vacancy, caused by the resignation of Sir John Rolleston, in East Hertfordshire, and not only wish him a sweeping success, but venture to say that in all likelihood, without a very strong local opponent arises against him, he will achieve that success. And in spite of the working against him of the ten thousand manpower political "machine" which the House parties will bring into operation against him. Feeling runs high just now over aircraft matters, and it would appear as if the happenings for and against us recently were an omen in favour of the air candidate. May it be so. To that end it is to be hoped every effort will be directed. Mr. Pemberton-Billing has been wasting no time since Mile End passed him by. He has been lecturing, writing constructive articles upon the air service as it might and should be, and has generally shown a firm grasp of his subject. He would be invaluable in the House in checking irresponsible and obviously incorrect



dealings with awkward questions, and he can be trusted to keep the subject, which we all have so much at heart, well to the fore. It behoves all who can possibly assist to do their bit in promoting his candidature. There is no time to lose, without the Unionists make the graceful concession of not putting forward an official candidate.

# The British Air Service

"PER ARDUA AD ASTRA"

UNDER this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

## Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 16th inst. :—

Flight Lieut. E. I. M. Bird granted temporary commission as Lieutenant, with seniority Feb. 15th.

H. J. T. Berryman granted temporary commission as Lieutenant, R.N.V.R., and appointed to the "President," additional, for R.N.A.S. To date Feb. 15th.

Temporary Lieut., R.N.V.R., W. H. Wood entered as Temporary Flight Sub-Lieutenant, and appointed to the "President," additional. To date Feb. 15th.

The following appeared among the Admiralty announcements of the 19th inst. :—

Flight-Commander J. R. W. Smyth-Pigott, D.S.O., appointed Acting Squadron-Commander. To date Feb. 1st.

W. A. D'Arcy, T. C. Copson and J. B. Handley-Seymour granted temporary commissions as Lieutenants, R.N.V.R., and appointed to the "President," additional, for R.N.A.S. To date Feb. 18th.

Late Temporary Lieut., R.N.V.R., G. A. Hoghton re-entered as Lieutenant, Temporary, R.N.V.R., and appointed to the "President," additional, for R.N.A.S. To date Feb. 18th.

N. D. M. Hewitt and J. E. A. Hoare, Temporary Sub-Lieutenants, R.N.V.R., entered as Probationary Flight Sub-Lieutenants, Temporary, and appointed to the "President," additional, for R.N.A.S. To date Feb. 18th. Also, F. A. Brooke, to date Feb. 27th.

The following appeared among the Admiralty announcements of the 21st inst. :—

A. Garrard, granted a temporary commission as Lieutenant (R.N.V.R.), with seniority of Feb. 19th, and appointed to "President," additional, for R.N.A.S. Feb. 27th.

## Royal Flying Corps (Military Wing).

THE following appeared in the *London Gazette* of the 15th inst. :—

*Flying Officers.*—Feb. 3rd, 1916; Lieut. D. B. Richardson, Welsh R.E. (T.F.), Lieut. R. B. Mansell, Gloucestershire Regt. (T.F.), Second Lieut. C. T. Latch, R.G.A. (T.F.), Second Lieuts. Special Reserve :—Ronald True, Rodney W. Heath, John R. B. Savage, Arthur G. Knight, Edward G. Ryckman, John W. Bailey, Leslie Porter.

*Assistant Equipment Officers.*—Second Lieuts., Special Reserve : John A. Gibson : Feb. 4th, 1916. Lionel A. Clayton : Feb. 7th, 1916.

*Supplementary to Regular Corps.*—Second Lieuts. (on probation), confirmed in their rank : Ronald True, Rodney W. Heath, John R. B. Savage, Laurence Minot, Arthur H. O'H. Wood, Edward G. Ryckman, Arthur G. Knight, Leslie Porter, John W. Bailey, John A. Gibson, and Lionel A. Clayton.

To be Second Lieutenants (on probation) : Ernest Graham ; Jan. 17th, 1916. Jan. 24th, 1916 : Stanley Whitechurch and John F. Luscombe.

The following appeared in a supplement to the *London Gazette* issued on the 16th inst. :—

## The British Government and the Fokker.

THAT the original Fokker machine, but not the successful type, was offered to the British Government was revealed by Mr. Tennant in the House of Commons on February 17th, when replying to Sir C. Hunter, he said Mr. Fokker offered to the War Office in 1913 a type of aeroplane invented by him. As the machine was inefficient and dangerous it was not adopted. Subsequently to the outbreak of the war Mr. Fokker produced a new design which was an imitation of the Morane-Saulnier monoplane,

This can, however, hardly be hoped for, and "P.B." should be backed up forthwith. He has himself already gone over a deal of the ground, and we hope he will get as his harvest the right to promote, through East Hertfordshire, the interests of the World of Aviation as a Power and as a Great Commercial Industry.

## Attached to Headquarter Units.

*Brigade-Commanders from Wing-Commanders, Royal Flying Corps, and to be Temporary Brigadier-Generals whilst so employed.*—Feb. 1st : Maj. (Temp. Lieut.-Col.) J. M. Salmond, D.S.O., R. Lancs. ; Maj. (Temp. Lieut.-Col.) T. I. Webb-Bowen, Beds.

## Establishments.

*Equipment Officers and to be Temporary Captains whilst so Employed.*—Jan. 30th : Qmrs. and Hon. Lieuts. J. Starling, A. Levick, A. H. Measures, F. H. Unwin, W. R. Bruce, Temp. Qmr. and Hon. Lieut. S. C. Parr, Lieuts. S.R., L. F. R. Fell, T. E. Robertson, S. A. Hebden.

*Supplementary to Regular Corps.*—Second Lieutenants (on probation), confirmed in rank : J. J. Lynch and V. F. P. Bryce.

The following appeared in a supplement to the *London Gazette* issued on the 17th inst. :—

*Flying Officer.*—Second Lieut. P. D. Rader, S.R. Dec. 28th.

*Assistant Equipment Officer.*—Second Lieut. V. F. P. Bryce, S.R. Oct. 11th.

*Memorandum.*—To be Temporary Second Lieutenant : Corpl. E. R. Moxey, R.E., for duty with Royal Flying Corps. Feb. 7th.

The following appeared in the *London Gazette* of the 18th inst. :—

*Flying Officers.*—Feb. 5th, 1916 : Capt. Henry S. Walker, Cheshire Regt. ; Lieut. C. G. Davidson, Canadian Local Forces ; Temporary Second Lieutenant A. M. Walters, 14th Reserve Regt. of Cavalry, and to be transferred to the General List ; Temporary Second Lieut. J. N. MacRae, Black Watch (Royal Highlanders), and to be transferred to the General List ; Temporary Second Lieut. J. S. Anderson, the Queen's (Royal West Surrey Regt.), and to be transferred to the General List ; Second Lieut. Geoffrey V. Randall, East Lancashire Regt., and to be seconded ; Temporary Second Lieut. J. R. Herbert, General List ; Second Lieut. R. J. Mounsey, Hampshire Regt., and to be seconded.

*Assistant Equipment Officer.*—Second Lieut. John Armes, Special Reserve ; Feb. 9th, 1916.

*Memorandum.*—Sergt. Leslie C. Fawcner, from Staff, 3rd Australian Infantry Brigade, to be Temporary Second Lieutenant for duty with the Royal Flying Corps ; Feb. 12th, 1916.

*Supplementary to Regular Corps.*—Second Lieutenants (on probation) confirmed in their rank : Leonard C. Kidd, Phillips D. Rader, and John Armes.

The following appeared in a supplement to the *London Gazette* issued on the 21st inst. :—

*Supplementary to Regular Corps.*—The appointment of Alexander J. Rickle to a Second Lieutenancy (on probation), which appeared in the *Gazette* of Jan. 17th, 1916, is cancelled under the provisions of paragraph 221, Regulations for Officers of the Special Reserve. Feb. 20th, 1916.

## Central Flying School.

THE following appeared in a supplement to the *London Gazette* issued on the 17th inst. :—

*Instructor.*—Lieut. (Temporary Capt.) G. D. Mills, Sherwood Foresters, a Flight-Commander, and retain temporary rank whilst so employed, vice Capt. (Temporary Maj.) L. W. B. Rees, R.A. Feb. 4th.

this being a French design. This design was not offered to the British Government, but was used in small numbers by the Germans, and a machine of this type was amongst those lately on view on the Horse Guards Parade. Mr. Fokker afterwards produced another modification of the Morane-Saulnier monoplane with an engine of much greater horse power, but this design, like Mr. Fokker's second design, was not offered to the British Government. It was this design which was now being used by the Germans.

## THE "X" AIRCRAFT RAIDS.

In view of the decision of the Government not to allow details of aircraft raids to be published, we are, as before, giving to each one an index number. Eventually, when details are available, we shall give the respective information under these index numbers, which will facilitate easy reference to each particular raid.

The following announcements have been officially issued:—

### "X 19" and "X 20" Raids (Lowestoft and Walmer).

*"War Office, Sunday, 8.35 p.m."*

"Four German seaplanes carried out a raid over the East and South-East Coasts at about noon to-day.

"The first raiders, two in number, both biplanes, appeared over Lowestoft at 10.55 a.m. They circled over the south side of the town for about 5 minutes and dropped bombs. In about 5 minutes they rose to a great height and seemingly vanished. At 11.10 a.m. the two seaplanes were again over the town and then vanished eastwards again. Altogether 17 small high-explosive bombs were dropped. There were no casualties. Considerable damage was caused to the outbuildings of a restaurant and to two dwelling houses. Two naval seaplanes went up at 11.5 a.m. and pursued the raiders, but without result.

"Meanwhile two other German seaplanes were making for the Kentish coast. The first passed over the Kentish Knock Light-vessel, dropping bombs in that vicinity at 11.20 a.m. The last raider made straight for Walmer, reaching that town at 11.27 a.m. Flying at less than 3,500 ft. altitude, it dropped six bombs and

turned sharply back to the east. Two bombs fell, destroying roofs and breaking windows, in the neighbourhood. One of these bombs fell close to a church, blowing out the windows, as the congregation were singing the 'Te Deum.' A third bomb fell on the roadway running along the beach, killing one man (civilian) and injuring one marine.

"The total casualties amounted to two men and one boy killed and one marine wounded.

"Two of our aeroplanes went up from Dover, and were over Walmer at 11.15 a.m. They pursued the raider, but apparently could not overtake him."

*"War Office, Feb. 21st."*

"Later information obtained states that the casualties at Walmer were over-estimated, the total being one lad of 16 or 17 killed, and another of the same age injured.

"About twenty shop fronts in the town were blown in."

### German Version.

*"Berlin, Feb. 21st."*

"On February 20th, at noon, naval air machines attacked the English coast. Factories at Deal, railway and harbour works and a gasometer at Lowestoft were liberally bombarded, with good results. The main station and the harbour at Lowestoft were hit several times. The gasometer collapsed from the effects of the bombs. In the Downs two tank steamers were pelted. Despite bombardment and pursuit by enemy airmen our air machines all returned safe."



## THE ROLL OF HONOUR.

THE Secretary of the Admiralty has announced the following casualties:—

Under date February 15th:

### Drowned.

Flight Sub-Lieutenant Herbert J. Page, R.N.  
Flight Sub-Lieutenant Bernard R. Lee, R.N.

Under date February 18th:

### Seriously Injured.

Probationary Flight Sub-Lieutenant Thomas C. Angus, R.N.

Under date February 20th:

### Killed.

Probationary Flight Sub-Lieutenant Francis H. Toms, R.N.

Under date February 21st:

### Killed.

Commander Neville F. Osborne, R.N. (Wing-Commander, R.N.)  
Lieutenant-Commander de Courcy W. P. Ireland, R.N. (Squadron-Commander, R.N.).

The following casualties in the Expeditionary Force have been reported from General Headquarters:—

Under date February 11th:

### Wounded.

Second Lieutenant C. Faber, Royal Flying Corps.



### The Government's Insurance Scheme.

REPLYING to Lord Parmoor in the House of Lords on the 17th inst., regarding the Government's Insurance Scheme, Lord Newton (Paymaster-General) said that up to the end of last November over 1,100,000 proposals for insurance had been accepted. Twenty-two per cent. of these were for combined insurances against aircraft raids and bombardments, and 78 per cent. for aircraft risk only. In addition, 65,900 certificates of insurance against aircraft and bombardment risks had been issued through the Post Office to owners of small property up to the 12th inst., the sums insured aggregating more than £3,800,000. This was under a special scheme introduced last November for the benefit of people who desired to insure property of a less value than £100.

Asked by Viscount St. Aldwyn as to whether there was any intention of revising the rates for agricultural property, which seemed enormous compared with those of the ordinary fire insurance, Lord Newton promised to inquire.

### London's Anti-Aircraft Defences.

In the House of Commons on the 17th inst., Sir Clement Kinloch-Cooke asked the First Lord of the Admiralty whether

Undated:

### Killed.

Second Lieutenant E. A. Cave, Royal Flying Corps.  
6679 2nd Class Air-Mechanic F. Charles, Royal Flying Corps.

### Previously Officially reported Missing, now Unofficially reported Killed.

Lieutenant E. S. Wilkinson, London R. (T.F.),  
1st Batt. (R. Fus.), and R.F.C.

### Previously reported Missing, now reported Died of Wounds as a Prisoner of War.

Lieutenant A. R. H. Browne, Royal Flying Corps.

### Wounded.

2551 1st Class Air-Mechanic F. Thomasson.

### Missing.

4473 Sergeant T. N. Palmer; 3318 2nd Class Air-Mechanic  
W. C. Pass, Royal Flying Corps.

The following casualties have been reported from Egypt:—

Under date February 15th:

### Killed.

Second Lieutenant T. G. Hakewill, Royal Flying Corps.  
Second Lieutenant R. Yates, Royal Flying Corps.



trained members of the R.N.A.S. Anti-Aircraft Corps have been removed from certain gun and light stations in or near London and their places taken by younger men and officers selected from the Army; if this has been done, why the change has been made; and whether the men so displaced are kept on full pay without being given employment of any kind.

Mr. Tennant, who said he had been asked by the First Lord of the Admiralty to answer the question, stated both naval and military personnel have been employed for some time in the anti-aircraft defences of London. Necessarily they are employed where their services are most useful and convenient, and they are moved as may be necessary at the discretion of the Field-Marshal Commanding-in-Chief the Home Forces. In one or two instances men may have been withdrawn, but that has been because they were required at other stations, and where they have been withdrawn they have been moved straight to these new stations. No men have been displaced and kept unemployed.

Further information regarding this subject will be found in the statement made by Lord Kitchener in the House of Lords and reproduced on p. 161.



## WIND FLYING.

By J. H. MOORE.

FLYING in a wind is really very little more difficult than flying in calm air if one goes to work in the right way.

The following notes may be of use to those whose flying, so far, has been confined to fairly calm weather.

One would, naturally, not try to fly in a 40 m.p.h. wind before being able to fly in a wind of, say, 10 m.p.h., which all means, that to fly in anything of a wind, one must start at the bottom, which in this case is generally termed a "calm."

Bumps and such like are soon not looked upon as quite so terrible as they used to appear.

Meanwhile, as one increases in confidence, and attempts flights in winds of increasing velocity, it is not necessary to run any unusual risks. For instance, it is just as well to give your engine a good run before starting—and start right into the wind.

After a time, having taken due caution all along, one finds it not at all hard to fly in most winds, bar hurricanes, &c. Having got to this stage, you will have noted that very frequently a wind of, say, 5-15 m.p.h.—as registered by the anemometer—is more tricky to fly in than a wind which may reach 25 or 30 m.p.h. on the ground, and you will realise that it isn't the strength of a wind which matters, within limits, but the extent of the departure of the gusts from its mean velocity, *i.e.*, a fairly steady strong wind is preferable to a wind of lower velocity but in which the gusts are more marked.

Having reached the stage of flying in a pretty strong wind, you will practically have acquired the habit of getting to work on any bump the instant it starts to appear—it's a good policy, and a habit which comes quite naturally.

The nature of a wind at low altitudes is determined, to a very great extent, by the contour of the ground, so that one encounters eddies which tend to alter the path of a machine, and which have to be corrected in the ordinary way. For example, a railway embankment produces a most pronounced up and down current when there is a wind blowing across it. As the height increases the effect becomes more and more damped—at 2,000-3,000 ft. the effect on the air of any ordinary obstruction on the ground is practically negligible.

Most winds, which may be pretty bumpy near the ground, become fairly regular when the region round about 3,000 ft. is attained. Generally speaking, winds also increase in velocity as one gets higher. For example, on one occasion I started off in a wind of approximately 25 m.p.h.—according to the anemometer. At first, things were pretty rough, but I was making headway quite satisfactorily. As the machine got higher the ground speed decreased, until at about 3,000 ft. no progress to speak of was being made. At this height the air was very much better as regards bumps, while at 4,000 ft. it was pretty steady; but when at this height, heading directly into the wind, I was making no progress at all—in fact, was "standing still." As 5,000 ft. and 6,000 ft. were reached the velocity of the wind had increased again, so that I was, by that time, going backwards—very appreciably—which was not over pleasant, as I had to get back to my starting place. Now as to getting back—no progress could be made at 4,000 ft., so down to 3,000 ft.; here again no forward motion was apparent.

At 2,000 ft. it was a bit better, but not good enough, so the return journey was made at about 1,200 ft.—and

even then it took just on half an hour to cover about five miles—the pitot tube showing 60 m.p.h.

The same thing happened on another occasion, but not in quite so pronounced a degree; still the machine was going well—backwards—at any altitude from 5,000 ft. to 8,500 ft.

When starting a flight in a strong wind it would seem advisable to attain a fair altitude, say 300 ft.—400 ft., before attempting to turn. This is pretty general knowledge, but, as such, should not be disregarded just when it is necessary to apply it.

Turning down wind, in really gusty weather, always carries with it the possibility of a drop—due, naturally, to the momentary loss of air speed which may be produced if a rear gust should strike your machine while turning.

Drift is a very well-known feature when there is any wind about. Everyone has seen an aeroplane going along somewhat "sideways."

Care should be taken when landing to put the machine head to wind if it is found that the machine is drifting, which effect, though easily noted when near the ground, is not quite so evident at a height. When about to land, the correct thing to do is to turn the machine into the draught—which is placing it head to the wind.

The direction of a wind may vary at different altitudes. If it is desired to know the direction of a wind near the ground when you are high up one can frequently get a good idea of this by having a look round for some smoke, which is an excellent guide.

Turning to another little matter which may be of interest—a wind of any strength makes a big difference to the range which a machine may command when a glide is started from a given height. This can be seen fairly easily from the accompanying diagram; a few figures have been introduced which may make things a bit clearer.

In general terms—

If	Gliding angle	= $r$ in $r$ .
	Wind velocity	= $\pm x$ m.p.h.
	Ground speed (in calm air)	= $k$ m.p.h.
	Height	= $h$ ft.

then the increase [(ii) down wind] or decrease [(iii) head to wind] in the gliding range of an aeroplane

$$= hr \times \frac{x}{k}$$

$AC$  represents the gliding path of an aeroplane (in still air), which in this case is taken as  $r$  in  $4$ . At this angle the air speed of the machine is 45 m.p.h.  $AE_1$   $AE_2$  represent the velocity of the wind (15 m.p.h., in this case, and which is supposed to be a steady wind) in the two directions shown—for the sake of comparison the resultant paths of the aeroplane  $AD$  and  $AF$  are shown on the same diagram.  $BC$ ,  $BD$ , and  $BF$  represent the ground speeds of the machine (i) in still air, (ii) when gliding down wind, and when (iii) gliding into the wind.

[In order to put this in language somewhat pertaining to flying, this matter is set out at some length, and, needless to say, the conclusion is not arrived at by the shortest route.]

$$\tan \alpha = .25, \text{ i.e., } \alpha = 14^\circ.$$

$$BC = AC \cos \alpha = 45 \times .97 = 43.65.$$

*I.e.*, in still air machine's ground speed is 43.65 m.p.h.

When gliding with wind ground speed will be  $15 + 43.65 = 58.65$  m.p.h.

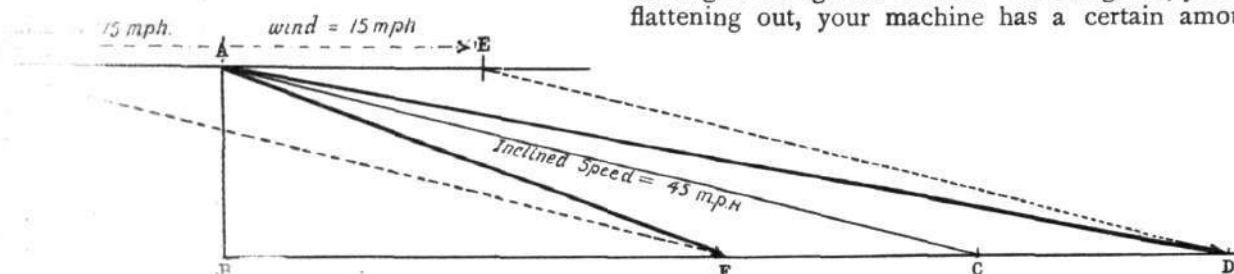
When gliding into wind ground speed will be  $43.65 - 15 = 28.65$  m.p.h.

As ground speed is proportional to gliding radius:—

Down wind range of machine is  $\frac{58.65}{43.65} = 1.3435$  of its range in a calm.

Head to wind range of machine is  $\frac{28.65}{43.65} = .6564$  of its range in a calm.

So that if the machine were at a height of 1,000 ft.,



down wind its range would be  $4,000 \times 1.3435 = 5,374$  ft.

I.e., due to the following wind the gliding limits of the aeroplane are increased by 1,374 ft. (ii)

Gliding into wind the gliding range is decreased, and

is  $4,000 \times .6564 = 2,626$  ft.; which represents a loss of 1,374 ft. in the range commanded by an aeroplane, under the conditions considered. (iii)

From the above, some definite idea can at once be formed of the result of an even moderate breeze on the gliding radius of a machine.

This is a point which one has always to allow for when coming down into a wind—it is advisable to leave oneself *too much* air space, in which to manoeuvre before landing, rather than too little. It may be useful to mention at this juncture that it is better to land rather faster than usual (relative to the air, of course) when coming down against a wind. In doing this, just before flattening out, your machine has a certain amount of

what one might call *excess* air speed—this tends to counteract the effect of any drop which would be produced if the head wind suddenly increased in velocity.

## PERSONALS.

At the request of several of our readers, we propose publishing, under the above heading, week by week, as occasion may arise, particulars of a personal character relating to those who have fallen or have been wounded in the country's service, announcements, marriages, &c., concerning members of the Flying Services and others well known in the world of aviation. We shall therefore be pleased to receive for publication properly authenticated particulars suitable for this column.

### Casualties.

Second Lieutenant ROBERT BARTON, Royal Flying Corps, was killed during a reconnaissance over the German lines on January 12th. A message was dropped from a German aeroplane over the British lines on January 30th stating that the officer was killed in an air duel with two Fokker machines, and had been buried with military honours at Roubaix, France. He was the only son of Mr. Barton, of Red Court, Carnforth, and spoke German fluently.

Lieutenant-Commander de COURCY WYNDOR PLUNKETT IRELAND, who is reported to have been killed on February 21st, entered the Navy as a cadet in September, 1901, and was promoted sub-lieutenant in November, 1904, and lieutenant in 1906. He became lieutenant-commander in February, 1914, and squadron commander in May of last year.

Second Lieutenant GEORGE L. PITT, 10th York and Lancs Regt. and R.F.C., who was killed on December 28th while making a long reconnaissance with Second Lieutenant M. Head, was born in 1887 and educated at Eastbourne College. He was originally apprenticed to marine engineering, and then joined Mr. Barber, who was building the Valkyrie machine on Salisbury Plain at that time. Subsequently he was with Mr. Howard Wright, and then went to Easchurch with Captain Dunne; and for some time previous to the outbreak of war he was at the Astra works in connection with the building of Dunne machines. In July, 1914, it was decided that he should become pilot of this machine, and he went to the Blériot School at Brooklands to qualify for his brevet, which he did on August 15th. Immediately on the outbreak of war he volunteered for service with the R.F.C., but was refused as he wore glasses, which also led to his refusal as a motor despatch rider. In December, 1914, he was gazetted to the 10th Yorks and Lancs Regt. stationed at Leighton Buzzard and applying a claim for the R.F.C. was accepted in July, 1915, and sent first of all to Sherburn, and later to Gosport. In October he flew from Farnborough to Headquarters in France.

Lieutenant GAVIN ALEXANDER PORTER, R.F.A. and Royal Flying Corps, reported died of wounds as prisoner of war on December 12th, was the elder son of Mr. Alexander Porter, of Kalgoorlie, Western Australia. He obtained his commission in the R.F.A. in May, 1913, and when war broke out he went to France

with his battery, the 68th, and came through the retreat from Mons and all the subsequent fighting. After acting with the R.F.C. as observer for some time, he took his pilot's certificate at Etampes, and returned to England to complete his course of instruction. He received his promotion in June, 1915, and was gazetted in the R.F.C. the following month. He returned to France in October, and was made a flight-commander a few days before his last flight on December 5th.

Commander NEVILLE FLORIAN USBORNE, R.N. (Wing Commander, R.N.), who is officially reported to have been killed on February 21st, became a midshipman in September, 1898, and in qualifying for the rank of lieutenant won the Ryder Memorial Prize, which is awarded to the sub-lieutenant who passes the best examination in French at the Royal Naval College. He specialised as torpedo lieutenant, and in submarine duties, and in 1905 qualified as an interpreter in German. Commander Usborne was best known for his work in connection with airships. He was appointed to the "Hermione" for service with airships in September, 1910, where he remained until January, 1912. In April of that year he became squadron-commander, Naval Airship Section, Royal Flying Corps, and in October, 1913, was given the command of Naval Airship No. 3. He was promoted commander and wing-commander in June, 1914.

### Prisoners of War.

Lieutenant S. E. BUCKLEY, 5th Batt. Northamptonshire Regt., attached Royal Flying Corps, who was previously reported missing, is a prisoner of war at Gutersloh. He was shot down within the German lines. A German aeroplane has dropped a message over the British lines giving news of his safety.

### Marriages.

On February 16th, at St. John's Church, Blackheath, by the Rev. A. C. Macnutt, C.F., Vicar, ALEXANDER SHEKLETON, Major, Royal Munster Fusiliers and Royal Flying Corps, only son of Mrs. Shekleton, of Blackheath, to IRENE MARY, second daughter of Mr. and Mrs. ARTHUR WATKINS, of Blackheath.

### Items.

Mr. THEO MARBURG, formerly American Minister in Brussels, has arrived in London from Boulogne. His son, who is in the Royal Flying Corps, has been severely wounded.



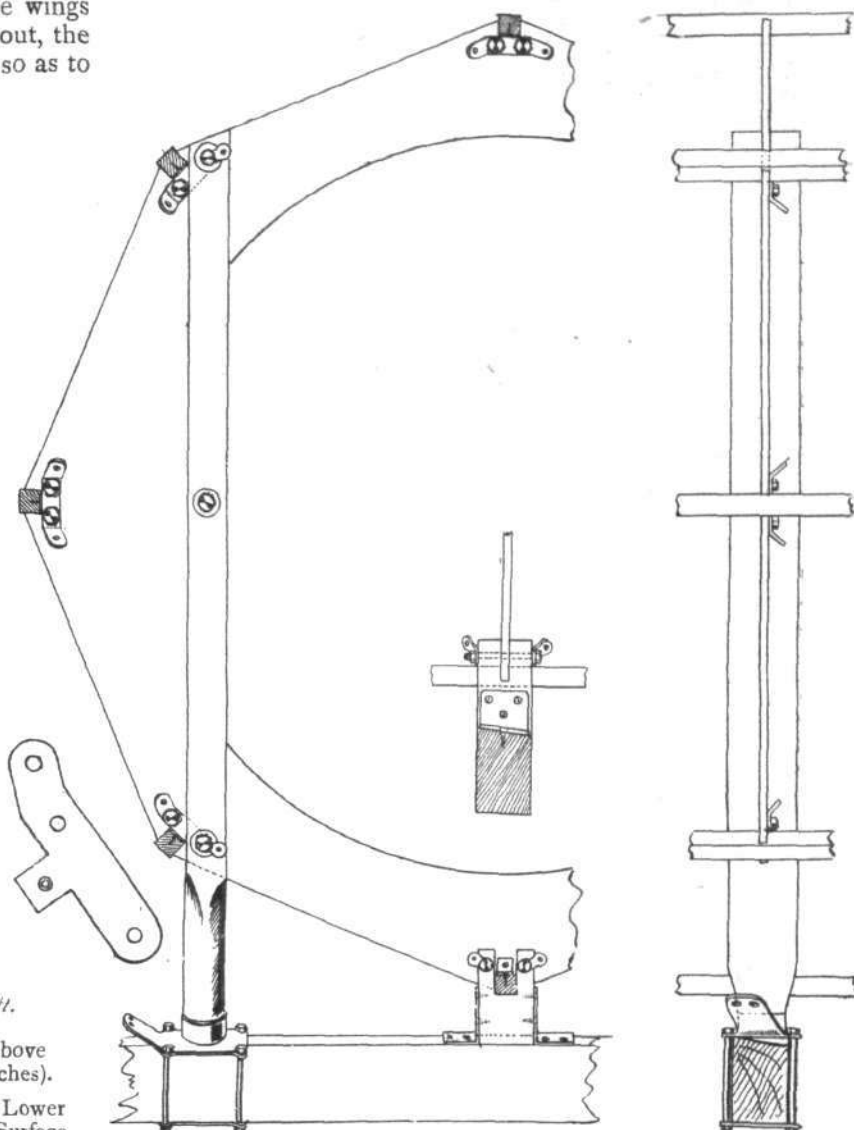
## A "POPULAR" TYPE AEROPLANE DESIGN.

By C. M. POULSEN.

(Continued from page 116.)

BEFORE deciding on the method of attaching the wings to the fuselage, the wing section must be plotted out, the main spars placed on this in the right position so as to obtain the depth of spar and relative position of front and rear main spars. From the table of dimensions of the R.A.F. 6 section published on p. 76 of our issue of January 27th I have compiled another table giving the dimensions of the section in inches for a chord of 5 ft., and the method of plotting the section is further shown in one of the accompanying sketches.

The front spar should be placed with its vertical centre line  $9\frac{1}{2}$  ins. from the leading edge, and the rear spar 2 ft. 7 ins. behind the front one. After allowing  $\frac{3}{16}$  in. for each of the rib flanges, a front spar  $3\frac{1}{4}$  ins. high over the centre line is obtained, while the corresponding depth of the rear spar is  $2\frac{1}{8}$  ins. Since the position of the centre of pressure is approximately half-way between the spars in normal flight—that is to say, when the planes are at an angle of incidence of  $2^\circ$ —I suggest making both spars of the same width, and to make them two inches wide. As spars of these dimensions would be unnecessarily strong and heavy, they should be channelled out to an I section, and for the front spars I suggest leaving the body of the spars  $1\frac{1}{8}$  in. wide. A similar width would, I think, be suitable for the bottom rear spar, while the top rear spar, which takes a considerably greater load, will require to be stronger, and the body should, therefore, be left  $1\frac{1}{4}$  in. wide. These sections are shown in one of the illustrations, and are placed in the relative vertical

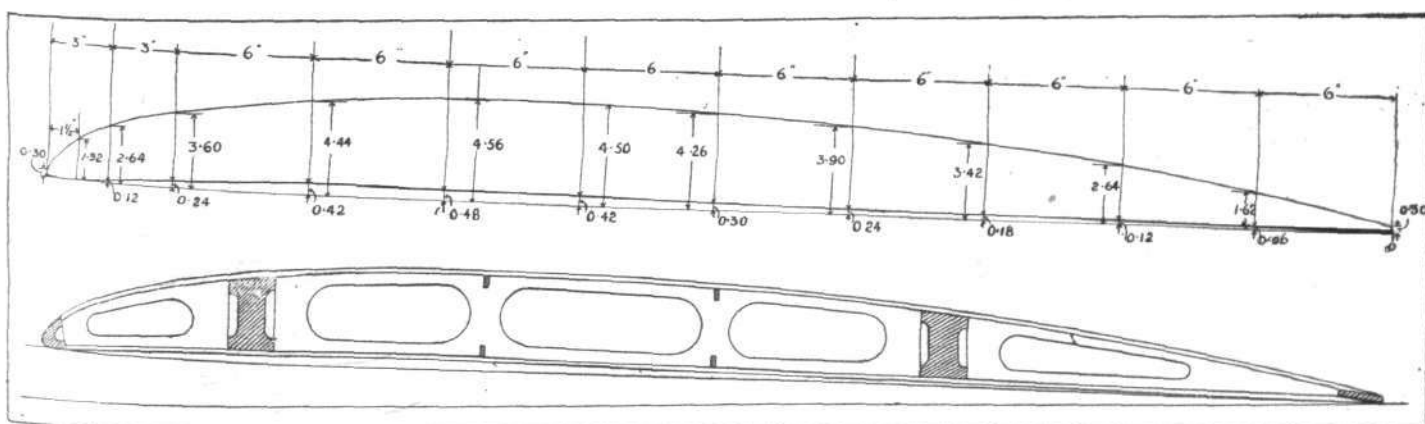


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General arrangement of attachment of wings to fuselage. Inset: Side view of the wood block attaching centre of rear spar to former and longeron. In the bottom left-hand corner is shown the wiring plate used at points where struts are attached to former.

Dimensions of R.A.F. 6 Section for a Chord of 5 ft.

Distance from Leading Edge (inches).	Height above Chord (inches).		Distance from Leading Edge (inches).	Height above Chord (inches).	
	Upper Surface.	Lower Surface.		Upper Surface.	Lower Surface.
0	0'30	0	30	4'26	0'30
12	1'92	—	36	3'90	0'24
3	2'64	0'12	42	3'42	0'18
6	3'60	0'24	48	2'64	0'12
12	4'44	0'42	54	1'62	0'06
18	4'56	0'48	60	0'30	0
24	4'50	0'42			



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Two sketches, approximately to scale, of the wing section. At top, dimensions of the section; and at bottom, construction of a rib.

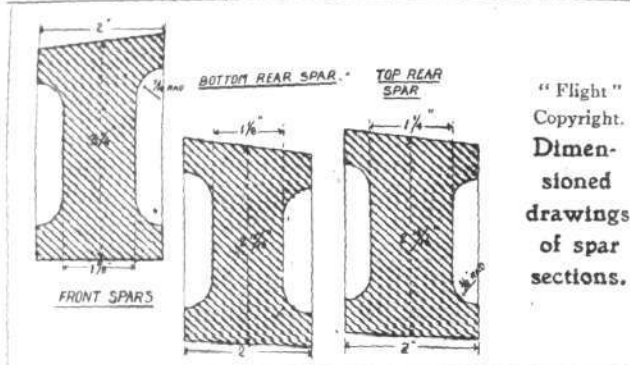
positions which they would occupy when the wings are set at an angle of incidence of  $2^{\circ}$ . In the sketch of the finished wing section is shown the method of lightening the webs by cutting out portions of the wood, and also, in section, the spars, leading and trailing edges, and stringers.

Having decided on the placing of the spars, it is possible to proceed to work out the attachment of the lower wing to the *juselage*. In another illustration is shown how it is proposed to do this. As the *longerons* are attached to the three-ply formers by small wood screws only, it is obviously not good enough to secure the spars to the *longerons*, and we must therefore devise some means of attaching them to the formers. This might, I think, be done satisfactorily by means of struts in which are cut transversely vertical slots  $\frac{1}{4}$  in. wide to accommodate the three-ply formers. These slots would go down to the point where the struts pass outside the body of the machine, and the end of the slot would here be cut on a slope to fit that of the lower sides of the octagon. In this fashion the weight of the body would not only be taken by the bolts passing through the struts and formers, but also by the formers resting on the bottom of the slots in the struts. At the top the struts would be cut off flush with the edge of the former. In order to keep the width between the struts as great as possible they should be placed quite close against the inner edges of the *longerons*. By so doing the struts will partly overlap one end of the wiring plates, which in these places will therefore have to be of a different design from those employed for the rest of the machine. This difficulty can easily be overcome by a special wiring plate at the points where the struts interfere, and the plates for use here are shown in a sketch forming an inset in the larger drawing of the general arrangement.

Instead of one of the portions of the wiring plate being bent this is left straight, and runs in between the strut and the former, being let into the strut. A bolt passing through strut, plate and former keeps it in position, and the function of the part of the wiring plate which is underneath

the strut is performed by a chain link placed between the strut and the head or nut of the bolt, as the case may be. Of course, a washer is interposed between the chain link and the strut. In order to further strengthen the wing attachment, I suggest leaving the three-ply former solid up to the inner sides of the struts as shown in the drawing.

The attachment of the wing spars to the struts is only indicated, as this will form the subject of a detail sketch



"Flight"  
Copyright.  
Dimensioned  
drawings  
of spar  
sections.

later. It will, however, be somewhat of the form indicated, *i.e.*, a top and bottom plate connected by four bolts, and a strut socket welded to the top plate. For attaching the centre of the bottom spars to the *longerons* and formers I suggest a short block of wood cut on a slope at the bottom to fit the top of the spar and having a transverse slot for the former and a longitudinal slot for the *longeron*. Angle plates will secure the block to the spar and two bolts, which also secure chain links for the wiring, attach the block to the former. In the drawing is shown the attachment of the rear bottom spar. The attachment of the front spar will be very similar, with the exception, of course, that the front spar goes right up against the lower *longeron*, and that therefore the lower portions of the struts will be shorter, as will also the blocks securing the centre of the spar to the former.

(To be continued.)

## Air Raid Damage.

IN the House of Commons, on Monday, Mr. Thomas, a Labour member, asked whether compensation would be granted in regard to a number of small dwelling-houses, not covered by insurance, damaged in the recent Zeppelin raid.

Mr. Rea stated that, when the Government scheme was introduced last July, full notice was given that no compensation could be paid in respect of property not insured under that scheme. It would be impossible to depart from that principle without endangering the whole scheme.

## French Military Aviation.

THE recent criticism directed against the French aerial service appears to have borne fruit, as it was reported from Paris last week that the Aviation Committee of the Senate, having examined the report of the delegations, which visited the aircraft factories in Paris and the suburbs, has come to the conclusion that French military aviation has made undoubted progress, and that it is now worthy of inspiring the confidence of the nation.

## Anti-Zeppelin Searchlights.

IF it is true, as announced by the *Journal*, that the French Government has decided to use Dussaud's invention for so-called "cold light" in order to increase the power of the anti-Zeppelin searchlights, it is to be hoped that the British authorities will lose no delay in taking advantage of it. The invention, which is four years old, it is claimed, results in almost the entire current being used as light instead of losing 80 or 90 per cent. in heat, as is the case at present. By this method, which it is believed is used in the searchlights mounted on Zeppelins, a Zeppelin should be detected even in fog.

## Awards to Steamship Captains.

PUBLIC recognition of the fine seamanship of Capt. Brennel of the s.s. "Avocet" and Captain Kelly of the s.s. "Dotterel," both of

the Cork S.S. Co., in evading attacks by German aeroplanes and seaplanes, was accorded at the Liverpool Town Hall on January 31st, when cheques from Liverpool and London War Risks Associations were presented by the Lord Mayor of Liverpool. The attack on the "Avocet" was made on October 30th, in the neighbourhood of the West Hinder light; 36 bombs being dropped. The "Dotterel" was attacked near the North Hinder light on November 4th.

## A German Apology to Denmark.

EXPLAINING that the violation of neutral territory was due to the airship having mistaken its whereabouts as the result of foggy weather, the German Government has expressed its regret to the Danish Government for the fact that a German airship on January 31st passed over Danish territory for a short distance near Vedsted.

## Air Scouting on Roumanian Border.

THAT Roumania is keeping a watchful eye on her Bulgarian neighbour is indicated by the following information received in Paris from Bucharest last week:—

"Being very anxious regarding the movements of Germano-Bulgarian troops on their frontier, the Roumanian Government sent three squadrons of aeroplanes over Bulgaria. The airmen reported that they had seen troops estimated to number 50,000 and a few new trenches, but no heavy artillery. During the raid the Rumanian aeroplanes evaded a very heavy infantry and artillery fire."

## Dutch General Killed in Java.

ACCORDING to Reuter messages from Batavia (Java), General Michielsen, commanding the troops in Java, was killed on February 14th, when an aeroplane, piloted by Flight-Lieutenant Terpooten, fell from a height of 300 ft. near Krawang. The general was severely injured, and died a quarter of an hour later, but it is stated that the condition of the pilot was hopeful. It is said that the machine had been rebuilt from an American waterplane.



# ROYAL AERO CLUB OF THE U.K.

## OFFICIAL NOTICES TO MEMBERS.

### Annual General Meeting.

THE Annual General Meeting of the Members of the Royal Aero Club of the United Kingdom will be held on Tuesday, March 28th, 1916, at Piccadilly, London, W.

Notices of motion for the Annual General Meeting must be received by the Secretary not less than twenty-one days before the Meeting, and must be signed by at least five Members. The last day for the receipt of notices of motion is Tuesday, March 7th, 1916.

### Committee.

In accordance with the rules, the Committee shall consist of eighteen members. Members are elected to serve for two years, half the Committee retiring annually. Retiring members are eligible for re-election.

The retiring members of the Committee are:—

Lieut.-Col. R. K. Bagnall-Wild, R.E.

Lieut.-Col. W. D. Beatty, R.E.

G. B. Cockburn.

Lieut.-Col. F. Lindsay Lloyd.

Capt. J. T. C. Moore-Brabazon, R.F.C.

Com. C. R. Samson, R.N., D.S.O.

A. Mortimer Singer.

T. O. M. Sopwith.

The Marquess of Tullibardine, M.V.O., D.S.O., M.P.

Any two Members of the Club can nominate a Member to serve on the Committee, provided the consent of the Member has been previously obtained. The name of the Member thus nominated, with the names of his proposer and seconder, must be sent in writing to the Secretary not less than fourteen days before the Annual General Meeting. The last day for the receipt of nominations is Tuesday, March 15th, 1916.

### SPECIAL COMMITTEE MEETING.

A Special Meeting of The Committee was held on Tuesday, the 22nd inst., when there were present:—Prof. A. K. Huntington, in the Chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Flight Commander C. F. Pollock, R.N. and the Assistant Secretary.

**Election of Members.**—The following New Members were elected:—

Second Lieut. George Purvis Bulman, R.F.C.

Hubert Frank Fisher.

Douglas Cayley Hutchinson.

Reginald Thornycroft Vernon.

### Extension of the Hours of Opening the Club.

The Club is now open from 9 a.m. to 10.30 p.m. each day, including Sunday.

## THE FLYING SERVICES FUND

administered by

### THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers, and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

### Subscriptions.

	£	s.	d.
Total subscriptions received to Feb. 15th, 1916	10,554	19	8
Collected at the Westland Aircraft Works, Yeovil (Twentieth contribution) ...	0	11	3
Collected at the Royal Naval Air Station, Chingford:—Ennis T. R. Chambers, 5s.; F. K. McClean, 10s.; Major Coles, 5s.; Lieut. Sangar, 5s.; R. E. Nicoll, 5s.; H. McClelland, 5s.; W. C. Power, 5s.; C. H. Hayward, 5s.; C. H. Murray, 5s.; R. C. C. Holme, 5s.; A. K. Peacock, 5s.; C. G. More, 5s.; E. C. Jowett, 5s. ...	3	10	0

Total, February 23rd, 1916 ... 10,559 0 11  
166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

## FROM THE BRITISH FLYING GROUNDS.

### London Aerodrome, Collindale Avenue, Hendon.

**Grahame-White Civilian School.**—Straights with Instructor last week: Messrs. Baragar, Box, Eichelbrenner, Holman, Rigby, Stapley, Tanner, and S. Williams. Circuits with Instructor: Mr. Verguill.

**Grahame-White School (R.N.A.S.).**—Straights with Instructor: Prob. Flight Sub-Lieuts. Carr, Gibbs, How, and Macted. Circuits alone: Prob. Flight Sub-Lieut. Aitkin.

Instructors during week: Messrs. Biard, Hale, Pashley, Manton, Russell and Winter.

Further practice impossible, owing to unfavourable weather.

**Beatty School.**—The weather has been so exceedingly unfavourable throughout last week, 11th to 18th inst., that it has been impossible to put in any instruction except a little "rolling" practice.

**Hall School.**—During last week the following pupils were receiving tuition:—With Mr. Anstey Chave: Messrs. Longton, Mahoney, and Worswick. With Mr. Jack Drew: Messrs. Millburn, Neal, and Roberts. With Mr. C. M. Hill: Messrs. Lieut. Cooke, Omerod, Arnsby, Doods, Wooley, Smith, Cook, and Thom. With Mr. H. F. Stevens: Messrs. Redford, Ridley, Nicolle, and Evans. Machines in use: Hall tractor biplanes.

Mr. Ridley flew for his certificate on Sunday, and passed all the tests in excellent style.

**London and Provincial Aviation Co.**—Pupils doing

rolling last week: Messrs. Hay and Egelstaff. Doing straights: Messrs. Clement, Palethorpe, and Scott.

Instructors: Messrs. W. T. Warren, M. G. Smiles, C. M. Jacques, H. Sykes, and W. T. Warren, jun.

The Royal Aero Club certificate was taken by Mr. C. J. W. Darwin, who passed his tests exceptionally well on the 13th inst.

On several days this week the weather was too windy for school work.

**Ruffy-Baumann School.**—With instructor last week: Messrs. Westlake, A. W. Williams, Williams, Avenbeke, D'Opstael, Muspratt, Durand, Winter, Edgar, Whitaker, Hoskyn, Dobson, Bolton, Cuthbertson, and Wood. Straights or circuits:—Messrs. Muspratt, D'Opstael, Thomsen, Laidlaw, Yiule, and Cuthbertson.

Instructors: Messrs. Edouard Baumann, Felix Ruffy, Ami Baumann, and Clarence Winchester.

Machines in use: 60 and 50 h.p. Ruffy-Baumann and Caudron-type biplanes, all fitted with dual control.

Applications are invited for one or two vacancies which are shortly occurring.

### Bournemouth School.

HIGH winds all last week; very little school work. Pupils doing rolling: Messrs. O. Wilson, J. Wilson, Morley Devos, W. Mouton, G. Mouton, and Morris. Straights alone: Messrs. Dubois, Meeus, and Smith. Half-circuits alone: Messrs. Simpson and Bonnevie.

Instructors: Messrs. F. King, J. G. Woodley, and S. Summerfield. Three Caudrons in use.



By R. P. HEARNE.

IN starting out upon this series of notes and comments on airships, it will not be necessary for me to go over the ground which has been made so familiar already to readers of "FLIGHT." The daily press is fond of making excursions into this territory, with results which often are amusing rather than helpful. But in these columns we can settle down to a more rational course of procedure.

As a preliminary, however, I must clearly set forth that I do not want to pose as an opponent of aeroplanes because I seek to concentrate attention here upon airships. Even yet there is a good deal of foolish partisan spirit, which tends to break up aeronautical students into cliques, one party being aeroplane devotees exclusively, another seeing good only in Zeppelins. To this narrow spirit we can trace not a few deplorable results in our national policy on aerial warfare.

#### Neglect of Airships.

It is for the reason that I feel the airship has been disgracefully neglected in this country that I seek to focus attention upon it now. Allied with that matter are various problems of national importance. If we can do anything to impress on the Government the need for developing airship design and construction much good will result. For until we have full facilities in these directions, we can hardly perfect our strategy against Zeppelins.

The chief reason why we have been so unsuccessful in fighting the German night raiders is that so few people in authority have understood the principles and possibilities of the airship. They fell into the dangerous error of despising the Zeppelin because it was German, and because it was condemned by "experts" who could not take a broad view in aeronautical affairs.

#### Drastic Reforms Needed.

Each raid brings home to the public that something has been lacking in our methods, and the feeling is growing in force that drastic reforms are essential if we are to command the air by night. With the political and administrative sides of this question I need not concern myself. The heart of the affair is that we want airships, we want better knowledge in all that pertains to airships, and we want to create a new British industry for the building of airships.

That is my propaganda here. We want airships. Other people, as well as myself, have been urging it for many years, but the nation and the authorities doubted the powers of the Zeppelins until the raids took place, and since then we have had that hasty improvisation which is the last resort of the unprepared.

Even if there had been no raids, some of us would still have clamoured for airships, for to the true student of aeronautics there is a special fascination in the unsolved problems. In themselves the raids are a minor matter as compared with the scientific, engineering, sporting, political, and military reasons which urge us to develop the airship.

#### From Sceptics to Scaremongers.

Expert and public opinion may yet argue that the Zeppelin has no military value, but it will be noted that as the war has progressed there has been a good deal of trimming of opinion, and at times we now stand in danger of the one-time sceptics becoming scaremongers whom a few Zeppelin bombs have driven into panic. The better our knowledge of airships is the less liable are we to be stampeded into extremes of opinion, for we will know pretty accurately the powers and limitations of the vessels, even when used by an unscrupulous enemy.

To gain that exact knowledge we require ships of our own, and it must be our pride as a nation of engineers that we have the best ships in the world. Possessed of that knowledge, and of the airships upon which it is based, we could look with complacency on the efforts which Germany or any other enemy might make to use aerial power against us.

#### What might have been!

Imagine us in August, 1914, with a fleet of high-speed rigid airships as ready for action as was our navy! Just think of the work we could have done at night over the dense masses of German troops as they swung across Belgium and France. The Rhine bridges quivering under troop trains would have been at our mercy. In the first thrust of a surprise blow Krupp's itself would have suffered, for, given the right ships, we would have found men who in skill and daring would have opened the eyes of the Germans as to the possibilities of aerial warfare.

But, alas, here we are in February, 1916, without a single high-speed rigid airship fighting for us. Germany has been raiding us at will for over a year, and still we are talking in terms only of defence, when it was our part from the first to be on the offensive. Germany has not fought fairly, and we have been helpless under her "kultured" misuse of the airship. She has given the authorities one surprise after another, and she has not yet come to the end of her devilish ingenuity.

What we want at this juncture is a great and well-conceived plan of offensive. We want new strategy, and a new construction programme. The Government has not yet realised the extent and progressiveness of the aerial menace. The very fact that the air service is but a side show of the army and navy proves that the authorities have not grasped the full significance of aerial power.

#### Reprisals.

When I speak of an offensive policy I do not mean those reprisal raids which are so lightly spoken of by irresponsible people in the sensational press. We do not want to deliberately slaughter German women and children, and if we debased ourselves to the German level in this respect we would find the plan useless. The German military staff itself would slaughter German women and children callously if it suited their purpose. We could never possibly draw level with the German militarists in beastliness.



But the practical barrier to aeroplane reprisal raids upon the enemy is that Germany is too remote and too well prepared. She was prepared in her aeroplane defences before the war. Any daylight raids upon Germany must be heavily paid for. Our own defences against day attacks have also been so far improved that the Germans make few attempts and little success attends them.

### Night Raids on Germany.

Night attack by airships is a wholly different affair, and the high-speed airship has obvious advantages, which Germany alone is able to make use of. The war has shown up the limitations of aeroplane and gun defences against night raids, and now the local authorities are

busy trying to make provincial towns invisible. This ostrich-like plan of plunging the country into darkness is all very well from the local safety point of view, but it does not suffice as a national policy. The danger is not put an end to, it is merely passed on.

The Germans, if they get free entry into England will unload their bombs somewhere. The humiliating thing is that they should be allowed to strike any part of England. Moreover, we must not overlook the point that the Zeppelins carry star shells and searchlights, and these can be used to pick out places for attack. As long as we are tied down to the defensive we are at a great disadvantage. We must keep the raiders altogether out of England, and to do that we need high-speed airships.

## LORD KITCHENER ON AERIAL MATTERS.

REPLYING to several criticisms in the House of Lords on the 17th inst., Lord Kitchener gave some important information regarding military aviation, anti-aircraft defence, &c. Lord Kitchener said: "I have no desire to complain of the manner in which noble Lords have introduced and dealt with this very important subject, but your Lordships will, I am sure, realise that a public debate in Parliament on our system of defence against aircraft cannot but be fraught with the risk of giving information and assistance to the enemy. These considerations also hamper very seriously any reply in detail to the questions raised, which the Government realise are the natural outcome of the general anxiety caused by the dastardly outrages on helpless women and children that have taken place. Something has been said against what is called the gas-bag policy. In the War Office there is no gas-bag school, and whatever may be the outcome of efforts to defend this country we shall not be affected by any preconceived notions. With regard to the Farnborough manufactory, I would like to point out that it is in the closest touch with those serving in the field, and that our aeroplanes are not built at Farnborough except in very small quantities. The specifications are made out there, and the work usually given to contractors. There is a constant interchange of information, and every new type of machine is tried in the field. As for moral iniquity, it is fruitless to discuss that feature of German attacks on peaceable citizens. It is only for us to take every possible step to defend this country from these invasions, to minimise as far as possible their effect, and to inflict every possible punishment on the invaders. We must, however, be on our guard lest any observations on the subject made in Parliament or in the Press have the effect of making the enemy believe that the moral and material damage which has been caused by air raids on England has been greater than is actually the case, and thus encourage the Germans to repeat these raids. Up to the present, hostile air invasions of England have had no influence whatever on the military conduct of the war, and, regrettable as are the loss of citizen life and the damage to private property, I do not desire to give too great importance to these attacks or allow them to affect our military operations. I have full confidence that the great courage and coolness hitherto displayed by our people will continue undiminished in any future attacks by the enemy's aircraft on this country, for it must be realised that in war it is not always possible to ensure safety everywhere. Some risks must be accepted in order to be strong at the most important point.

"Hitherto, in regard to aeronautics, the War Office has been primarily interested in dealing with the requirements of the various theatres of war, and, although I have observed that criticisms have been levelled in another place at the air service at the front, in Flanders, I can assure your Lordships that these criticisms are unfounded and unmerited. No service in the field has in my opinion, been more efficient than that of our Flying Corps, directed as it is by officers of the highest technical capacity and manned by pilots and observers whose skill and courage are unsurpassed. It is, however, with home defence, the responsibility for which has been taken over by the War Office only within the last few days, that the critics are most concerned. I may say at once, as regards Zeppelin attacks, that it is beyond our power to guarantee these shores from a repetition of incursions. But, although we have only one example of a Zeppelin being destroyed by aeroplane attack—I allude to Lieut. Warneford's gallant action—there have been several cases in which we have so disabled the enemy's aircraft as to bring them eventually to the ground, or to render them useless for further service. During the last raid, while we are sure that one airship was lost at sea, we have very good reason to believe that a second was placed out of action. There are three principles which govern

our air defence in this country: (1) Good information as to the arrival and movements of hostile aircraft; (2) defence by artillery from the land; (3) attacks in the air by aeroplanes as moving more rapidly than Zeppelins can travel. As regards the first, a system has been adopted which I am confident will give us sufficient warning of the impending arrival and possible movements of airships.

"Arrangements have been made with the Post Office so that all local centres will have thorough and timely warning, and, in order to co-ordinate local effort for defence, and to take charge of artillery action and lights, special officers are being appointed at all the principal centres, whose sole duty it will be to organise the defences of the areas entrusted to them. As regards the second point—artillery—owing to our largely increased ordnance requirements there has been great difficulty in securing an adequate supply of anti-aircraft guns, but I may inform your Lordships that the construction of anti-aircraft guns has now priority over other Ordnance, and as fast as these guns are produced by the Munitions Department they will be distributed to the best advantage throughout the country. Guns, though they can make Zeppelins rise to a height where observation is probably difficult, cannot with any certainty hit the Zeppelins and thus arrest the discharge of the destructive bombs which they carry. This can only be effected by the annihilation of the machine itself. Hence the third principle I have mentioned is an important adjunct of our operations. The attack by aeroplanes at night is attended by great difficulties, many of which will occur to your Lordships. Those we believe, with more extended practice, will in a great measure be overcome. One of the most important points affecting the defence of this country, as well as our operations in the field, is the provision of aeronautical material. Large orders have been given, and large supplies have been delivered, and are becoming available in increasing quantities. But as flying machines, like artillery, are an adjunct of both Navy and Army, it has been found advisable to co-ordinate the supply of engines and machines by the establishment of a Sub-Committee of Imperial Defence to deal with the relative requirements of the two Services. Your Lordships will, I am sure, agree that arrangements for anti-aircraft defence are as important as any other for the service of the country, and, as in all military undertakings against a vigilant enemy, secrecy is an important factor in our calculations for success. The War Office in the last few days have taken over the responsibility for home defence, and it will be placed in the hands of Field-Marshal Lord French, who will, I am glad to say, have the help of Sir Percy Scott as his expert adviser.

"The noble Lord said that the naval men who have charge of the guns in London are being removed, but he is a little mistaken in that. The new Garrison Artillery that have taken over the guns for the defence of London are for new guns, newly mounted, which do not take the place of naval guns. The men are also selected men, who have been shooting at enemy aeroplanes at the front. I am glad of this opportunity of being able to assure your Lordships and the country that the War Office will leave no stone unturned in its efforts to improve to the utmost extent our home defence against Zeppelin raids, and we shall continue to take such energetic steps in the development of our service in the air as shall enable us to inflict the heaviest penalties on the aggressors. With reference to the statement of the noble Lord opposite about ascension at night, I am informed that no order has ever been sent to a pilot of the Royal Flying Corps to make a night ascent for the purpose of attacking a Zeppelin. Notice is given to each station if a Zeppelin is to be intercepted, but the decision as to what should be done is left to the senior officer on the spot, and if he decides that the weather is suitable he is the first to ascend."



THE new Thomas military tractor which has been undergoing tests at Ithaca, is, I hear, developing an excellent turn of speed. Not long ago Frank Burnside, one of the Thomas pilots, conducted a series of tests over a measured course of half a mile. The machine covered that distance in  $17\frac{1}{2}$  seconds with the wind, and in  $29\frac{1}{2}$  seconds against it. The average speed of the tests was one mile in 38 seconds. On one occasion a speed of 102 m.p.h. was attained. The test flights were officially observed by Mr. J. J. Frawley, who is a representative of the Aero Club of America, which body has been notified of the performance. It is claimed that the Thomas has broken all American records for speed. The engine with which this machine is fitted is one of the new Thomas aeromotors of 135 h.p. that have done so well in their preliminary trials.

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The recent day-light raids by German seaplanes on places on our coast have again given rise to heated discussions the country over. There can be no doubt about it, the British Public are getting annoyed at these repeated senseless attacks on peaceful coastal towns, and among the questions asked the most frequent are: How is it that these raiders can manage to come right across a large portion of the North Sea without being detected from the many ships we must have ever on the alert in those parts. And if they do come across, why is it that they are able to get as far as the coast, drop their bombs, turn about and make good their escape? To the first question, which is a perfectly natural one, those in authority would probably reply that it is an extremely difficult thing to detect a machine flying at an altitude of from 8,000 to 10,000 ft. And if it is discovered it is next to impossible to determine

whether it be a hostile or one of our own seaplanes. I willingly grant that these difficulties do exist, but at the same time it does seem to me that much might be done by efficient organisation. After all, from what I can gather, it is not such a common occurrence to come across our seaplanes a hundred miles or so out to sea, so that when a machine is sighted it would, I should imagine, be the first thing that came to the mind of the commander of the ship that spotted it to send a wireless message to one of our stations ashore informing those in command there that a machine had been sighted at such and such a point going in such and such a direction. Surely, it would not be beyond even the British power of organisation to have all our air stations connected up by telephone in such a manner that the moment information was received of a machine approaching the coast a number of our own would start from each air station, climbing to the altitude at which the approaching machine might be expected to arrive, and wait there ready for him. If it should by any chance prove to be one of our own, the pilots would be none the worse for their little extra practice, and if, as is more likely, the visitor turns out to be one of the Boches on evil intent, they would be ready for him. The difficulty of distinguishing friend from foe out at sea is, it seems to me, more apparent than real, since, if a machine sighted from a ship is flying at some 7,000 or 8,000 ft. it is reasonably safe to assume that he comes from the other side. Our own machines, when they happen to be any great distance beyond sight of the coast, would, it may be assumed, be on the look out for submarines, and would in that case certainly not be flying at such a great height, but more likely at between 2,000 ft. and 3,000 ft. or less. Besides any commanders of our men-of-war would be, or certainly



THE NEW THOMAS MILITARY TRACTOR BIPLANE, TYPE D2.—Fitted with one of the new 135 h.p. Thomas aeromotors, this machine is said to have attained a speed of 102 m.p.h., which constitutes, it is claimed, an American record.



ought to be, informed of the movements of our air scouts that might be on long distance reconnaissance.

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The second question is so largely interdependent on the first, that if the first is answered satisfactorily the second would be very much modified. Since, however, it appears that approaching raiders do manage to get across without being detected or their arrival signalled to the air stations, it is to be presumed that their identity is not detected until the bombs begin to drop. It is not difficult to understand why, while this is the case, they can manage to get away. If the town bombed does not happen to be so close to one of our air stations that the reports can be heard from there, a telephonic message must be sent to the commanding officer of the air station. By the time machines are ready to start in pursuit several minutes will have elapsed from the time the first bomb is dropped. Our aviators are then faced with two difficulties, that of locating the hostile aircraft, and that of reaching the height at which the enemy is flying. Even under favourable conditions twenty or thirty minutes may easily elapse from the time of dropping the first bomb until an altitude of 8,000 ft. is reached. By that time the raider can be, and probably will be, some 30 miles out to sea again, making good time after having lightened his machine of the weight of the bombs. Why not bring him down by gun fire? is a question frequently asked. A few minutes' consideration, however, will show that it is obviously out of the question to girth the whole of our coast line with guns of sufficient size to be of much use against aircraft. What seems to me a possible remedy would be to have stationed at each of our air stations on the east coast a few very fast scouts of high power, easily capable of outclimbing any German seaplane that has to carry enough fuel to take him back to his base. Such fast scouts, which need not have a very long range of action since they would be used solely for defensive purposes and at a comparatively short range, might be fitted with engines of as much as 200 h.p. so as to obtain good speed and climb. Their speed range need not necessarily be very great as they might reasonably be expected to be able to return to their air station, where a landing speed of 60 m.p.h. should not present unsurmountable difficulties to experienced pilots. In fact these fast scouts would perform a very similar function to that of the much boasted German Fokkers. If the powers that be should decide that such machines are the best defence

against day-light raiders there are plenty of manufacturers who would and could undertake to produce them in a very short time.

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Just at the moment of writing the news is received that the French have brought down a Zep. by means of incendiary shells. Until more detailed information is available, it is difficult to say exactly how it came about, but the mere fact that incendiary shells were used would seem to indicate that the French have at last found a type of shell that will ignite the hydrogen of an airship. It is a little difficult to see why, apart from the fact that pure hydrogen will not burn, the problem of setting an airship on fire should have been so long in being solved. What is apparently wanted is a projectile of an incendiary character which, on hitting the airship, will not pass quickly through it. The trouble is that the shells pass through the envelope at such a pace as to give the incendiary portion of the projectile no chance of igniting the hydrogen where it flows out of the envelope and mixes with the oxygen of the air. It should be of a character to be stopped by and adhere to the envelope itself. A friend of mine, who rather prides himself on his knowledge of pyrotechnics, assures me that there would be no difficulty in developing the common or garden variety of rocket for this purpose so that it could be fired from a gun and consequently have its range largely increased. It could, as he puts it, "be fitted with claws or hooks that would prevent it from passing right through the envelope of the airship, and would burn long enough to ensure ignition of the hydrogen." Well, there may be something in it. Personally, I am inclined to think that such a rocket might have a somewhat erratic trajectory.

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Of the many suggestions for methods of informing inhabitants of this dear old London of ours of approaching hostile aircraft at night, the most sensible, to my mind, granting that it be desirable that we should be told at all, was put forward by a correspondent to an evening newspaper recently. He suggests that when news is received that Zeps. are reported to be heading for London the searchlights should show a red beam. There can be little doubt that in this way the whole of London and its suburbs would know within a very few minutes, those being prevented by indoor work from noticing the red beams learning from others the presence of the danger signal.

ÆOLUS.



LAST Saturday must be written down as an absolutely blank day, although, it is true, one of the "Pups" of the Hall School did come out and essay a little practice. Exhibition and passenger flying, however, was entirely out of the question owing to the very bad weather that prevailed.

On Sunday the weather improved sufficiently to enable a fair amount of flying to be got through. The following is a list of the pilots and machines that contributed towards the afternoon's proceedings:—C. Pashley, with

passengers, on the 60 h.p. G.-W. school 'bus; J. H. Moore on his 50-55 h.p. biplane; Marcus D. Manton, B. F. Hale, and J. S. B. Winter on 60 h.p. G.-W. school 'buses, with and without passengers; R. Kenworthy on a 50 h.p. Beatty-Wright; H. Sykes and W. T. Warren on 45 h.p. L. and P. biplanes; G. Virgilio on a 50 h.p. Beatty-Caudron; and M. Osipenko on a 60 h.p. G.-W. school 'bus. In addition to the above a certain amount of school work was got through.

# AIRCRAFT WORK AT THE FRONT.

## OFFICIAL INFORMATION.

### British.

*General Headquarters, Feb. 20th.*

"A successful night air raid was made by our aeroplanes against Cambrai aerodrome, bombs being dropped on and exploding inside the sheds. The machines returned safely."

*General Headquarters, Feb. 21st.*

"An attack on the dépôt at Don was carried out by twenty-six aeroplanes yesterday. Extensive damage is believed to have been done to the stores and railway. All machines returned safely."

"The enemy's aircraft has during the last few nights made several attacks on the various towns in our area, with no military results. A few civilians were, however, killed."

*War Office, Feb. 21st.*

"*Mesopotamia.*—Information has been received from the General Officer Commanding the troops in Mesopotamia that on February 17th and 19th bombs were dropped by hostile aeroplanes on our camp at Kut, and that no damage was done. There is otherwise no change in the situation."

"*Egypt.*—A telegram received from the General Officer Commanding-in-Chief in the Mediterranean states that in the course of an aeroplane reconnaissance of the enemy's advanced posts east of the Canal on February 20th one of our aviators, descending to 600 feet, destroyed the enemy's power station at El Hassana with a 100 lb. bomb."

### French.

*Paris, Feb. 20th. Evening.*

"An enemy aeroplane dropped several bombs on Dunkirk without doing any damage. Another machine last night dropped two bombs, which fell in a field south of Lunéville."

*Paris, Feb. 21st. Afternoon.*

"A squadron of five aeroplanes bombarded the German munition depôts at Chateau de Martincourt and Chateau Azondange, south-west and south-east of Dieuze."

"German aviators last night dropped some bombs on Lunéville, Dombale, and Nancy, which only caused very slight damage."

*Paris, Feb. 21st. Evening.*

"The day was marked by numerous fights in the air. Over Talsdorf, east of Altkirch, one of our aeroplanes attacked at very close quarters a Fokker, firing fifteen shots at it. The enemy machine side-slipped on its right wing, and then fell."

"In the region of Epinal an Albatros was brought down by our artillery fire."

"In the region of Bures, north of the Forest of Parroy, a German machine was attacked by two of our aeroplanes and fell within our lines. The pilot and the passenger were killed."

"A squadron of seven French machines fought four enemy aeroplanes in the region of Vigneulles les Hattonchatel. Two of the latter were forced to land. The two others fled."

"Enemy machines bombarded Fismes, Barle-Duc, and Revigny. Near this last point a German air squadron of fifteen machines was attacked by one of our chaser squadrons, and was forced to fight. One German machine was brought down near Givry-en-Argonne. The two aviators were made prisoners. A second enemy machine which was pursued dived suddenly into its own lines."

"One of our bombing groups, composed of seventeen aeroplanes, dropped seventy bombs of heavy calibre on the aerodrome of Habsheim and on the goods station of Mulhouse."

"Another group of twenty-eight machines dropped numerous bombs on the enemy's munitions factory of Pagny sur Moselle. At the conclusion of these several operations all our machines returned to their landing grounds."

"A Zeppelin flying south from Sainte Menehould was brought down by the motor-gun section of Revigny. The Zeppelin was shot through with an incendiary shell, and fell in flames in the neighbourhood of Brabant le Roi."

### Russian.

*Petrograd, Feb. 15th.*

"German aviators appeared over the Riga sector. The firing on both sides has been lively on the whole of the sector."

"On the Middle Strypa our artillery fired upon four enemy aeroplanes. One of the aeroplanes was hit and fell in the enemy's lines."

*Petrograd, Feb. 19th.*

"Our heavy artillery forced a captive balloon which was ascending near Yezerno, north-west of Tarnopol, to descend."

*Petrograd, Feb. 20th.*

"Enemy aeroplanes appeared at several points over the Riga district, and a bomb was dropped on Riga."

"In the region north of Kreuzburg a German aeroplane dropped several bombs. North of Dvinsk two Zeppelins flew over Mischel."

### Belgian.

*Havre, Feb. 15th.*

"The activity has diminished during to-day on our front. As reprisals for the recent bombardment carried out by enemy airmen one of our squadrons dropped sixteen bombs with success during last night on the aerodrome at Handzaeme (east of Dixmude)."

### Italian.

*Rome, Feb. 15th.*

"Enemy air raids are reported on Brentonico (Lagarina Valley), Schio (Lesgra Valley), and Latisana (Tagliamento Plain). The damage done was strictly limited, and there were but few victims, all of them civilians. The bombardment of Schio was checked by the intervention of our air squadron. Near Gorizia one of our aviators attacked an enemy aeroplane and forced it to take to flight."

*Rome, Feb. 19th.*

"In reply to the numerous, indeed all too frequent violation by the enemy of the right of the civilian population, perpetrated with persistent intensity ever since the outbreak of the war, yesterday morning a squadron of 'Caproni' aeroplanes carried out an incursion over Laibach. Although subjected during the whole of their flight to the fire of numerous and powerful enemy anti-aircraft batteries, and attacked by literally enormous crowds of enemy aeroplanes, our daring aviators succeeded in reaching and attaining their objective. Between gaps in the dense clouds our aviators were able to drop some grenades and bombs on the town. One of our 'Caproni' machines, attacked and surrounded by six Austrian aeroplanes, was compelled to come to earth on enemy territory; the others returned unharmed to their lines."

### German.

*Berlin, Feb. 17th.*

"Our airmen attacked Dvinsk, and the railway establishments at Wilsika."

*Berlin, Feb. 18th.*

"Nocturnal enemy aerial attacks in Flanders were immediately returned by our aviators with an aerial bombardment of Poperinghe."

"Enemy aviators attacked the railway station of Hudova, in the Vardar Valley, to the south of Strumitza."

*Berlin, Feb. 19th.*

"Our airmen successfully attacked the Abeele flying ground, south-west of Poperinghe, and the railway stations in the vicinity."

*Berlin, Feb. 20th.*

"In an aerial battle east of Peronne an English biplane armed with two machine-guns was shot down. The occupants of the machine are dead. Our aviators have dropped bombs on various points behind the enemy's northern front and also on Lunéville."

"German aviators have bombarded Logischen and the railway establishments of Tarnopol."

*Berlin, Feb. 21st.*

"Our aeroplane squadron attacked several enemy positions situated behind their lines, such as Furnes, Poperinghe, Amiens, and Lunéville. Many successful results were observed."

"Yesterday naval aeroplanes heavily bombarded the aerodrome and camp at Furnes, south-east of La Panne, and returned safely."

### Austrian.

*Vienna, Feb. 19th.*

"Three aeroplanes reached Laibach and dropped bombs there and at several places in the neighbourhood, but entirely unsuccessfully. When they returned our aviators attacked the hostile aeroplanes and brought down a big machine of the Caproni type."

### Turkish.

*Constantinople, Feb. 17th.*

"*Irak Front.*—One of our aeroplanes flew over enemy artillery positions at Kut-el-Amara, successfully dropping twelve bombs, which had a great effect."

*Constantinople, Feb. 15th.*

"*Caucasus.*—Two Russian aeroplanes were damaged by our fire and were compelled to descend. Otherwise there is nothing fresh to report."

*Constantinople, Feb. 20th.*

"On the 17th one of our airmen bombarded a transport anchored near Mudros. The fore part of the vessel was set on fire."

### From Other Sources.

A message from the Austrian War Press quarters, received in Amsterdam on February 15th, said that on February 13th three Russian and French aviators raided Czernovitz, dropping six bombs. The Austrian anti-aircraft guns did not hit the aviators, who returned safely to their base.

Writing to the *Daily Telegraph* from Milan on February 15th, regarding the recent fighting in Southern Alsace, Mr. A. Beaumont said:—

"Last Saturday an aerial battle took place over Schoenbrunn, in which some twenty aeroplanes were engaged."



Writing two days later on the subject of the fighting round Seppois, Mr. Beaumont said:—

"Whilst it lasted French aeroplanes, despite clouds of shrapnel, circled constantly over the German lines, and one was seen boldly descending to within three hundred metres of the German trenches, and then flying away unscathed. It was a big biplane, which sailed calmly through the smoke of hundreds of exploding anti-aircraft shells, and seemed perfectly immune to their attack. The Swiss spectators were thrilled by this bold performance, and cheered and waved their hats with enthusiasm."

A Reuter message from Salonika on February 17th says:—

"The enemy yesterday developed a certain amount of aeroplane activity over the French and British lines, without success, however, being driven off by our artillery."

Writing to the *Daily Telegraph* from Salonika, on February 17th, Mr. G. Ward Price says:—

"One of the most modern types of German Aviatik biplanes was brought down by a French aeroplane at Karasuli this morning. The latter, manned by two very young airmen, sighted their adversary while on patrol. They chased him, and opened fire with such effect that the machine came down with a hole in the petrol tank and the observer lying back in his seat with five bullets in his thigh. The other German sprang from the driving seat while the Frenchmen were still circling to land, and, throwing away his cap and kicking off his heavy, fur-lined boots, ran off across country and was lost to sight."

"The captured aeroplane is quite undamaged, and will be exhibited in the street to the public of Salonika, like the last. A cavalry patrol is scouring the country for the German. General Sarraïl has given the Legion of Honour to the officer piloting the French machine, and the Military Medal to his observer."

According to the *Petit Parisien's* correspondent, the occupants of the French machine were Lieut. Mintguyaya and Sergt. Fetin. This correspondent, writing on February 18th, gives the following details of the recent raid on Strumnitza:—

"At eleven o'clock yesterday morning 16 French aeroplanes bombarded Strumnitza railway station, where German reinforcements had just arrived. They dropped 165 bombs of heavy calibre, several of them incendiary."

"According to the official report, borne out by photographs which the General Staff received this evening, the results of the bombardment were considerable. Some German Albatros machines tried to cut the French squadron off on its way back, but our aviators, rising to an altitude of 10,000 feet, gave the enemy the slip. One of our airmen, Bombardier Baud, was slightly wounded in the left hand. The whole squadron got back unharmed."

A message from the *Standard* correspondent at Athens, dated February 18th, says:—

"A German aeroplane was captured by the French near Karsouli, Macedonia, yesterday. It was equipped with a machine-

gun, bombs, and photographic apparatus. The German observer, a captain, died from his wounds at Salonika last night. The pilot, who was wounded, discarded his uniform and took to flight, but was captured three hours later by a French patrol."

Mr. G. J. Stevens, writing to the *Daily Telegraph* under date February 15th, says:—

"Of Turkish troops in Bulgarian Thrace there are none. As to German troops, they consist of fifty infantrymen quartered at Xanthi, four aeroplanes and an aerodrome (on an empty site before the building of the Ottoman Tobacco Régie) and officer aviators."

The Udine correspondent of the *Corriere della Sera* reports that observers in the Chiese valley saw one of the Austrian aeroplanes on its return from Milan come down precipitately in the valley of the Bocche di Cadria, having been hit by an anti-aircraft battery. It fell in a deserted spot, where it remained for two days abandoned. Later a small number of Austrians were seen carrying debris of the aeroplane, but it could not be discovered if there were any human bodies.

Writing to the *Daily Telegraph* from Milan on Monday Mr. A. Beaumont says:—

"This morning a signal was fired giving inhabitants of Milan a hint that an Austrian aeroplane raid on their town was imminent. Looking out of my window at the sky, which was a beautiful blue in the morning sunshine with only a few white clouds here and there, I already saw about a dozen Italian aeroplanes describing majestic circles at various heights and rising rapidly, prepared to meet the Austrian war-hawks."

"The trams stopped, and I could see that by this time the few people who remained in the streets were obeying the injunctions of the authorities to seek shelter at the first signal. Meanwhile a military funeral, with band playing the funeral march, was slowly proceeding through the street, unconcerned, and people quietly waited for events in their houses. Gradually the Italian aeroplanes rose higher and higher. They seemed to number more than twenty. Finally they headed in a north-easterly direction, and evidently started in chase."

"The news had been received that enemy aeroplanes had been sighted at Brescia. It was unknown, of course, what direction they would eventually take. Nearly an hour passed and nothing happened, when finally, in the distance over the direction of Monza, a number of shells exploding dotted the sky with their little puffs of white smoke. By means of a field-glass they could be seen distinctly. Some people believe they could have counted more than fifty shells exploding. Many seemed to be fired from the Italian aeroplanes in active pursuit, and an aerial battle appeared in progress. The result of the chase is not yet known, but we have this satisfaction—that Milan was saved. The town this time was well protected, and the authorities deserve the highest praise for the efficient way in which the population was warned. Still higher credit is due to the courageous Italian air defence squadron, which so gallantly chased the enemy from Milan."

### The Air Raids on the Kent Coast.

IN the House of Commons on Monday Capt. Bennett-Goldney complained of the misleading statements which had been made by Ministers in the past as to our preparedness for dealing with aerial raids. In the daylight raid on the previous day the enemy aircraft as on previous occasions left our shores unscathed. Regarding the daylight raid on Dover on January 23rd, the Under-Secretary for War had by answer in the House—partly based on a memorandum received from the Admiralty—given an impression which was far from being in agreement with the facts. The machines were not ready and the officers were not present. The Government had chosen, he presumed for reasons of economy, to give them a mess some two miles from their work, and it was lunch time. Were the machines armed, and if so, how was it that in the scramble at least one airman had to go up with only a Winchester rifle and some five rounds of ammunition? The ascent was made after the enemy aeroplane was out of sight. What happened was a battle between one of our aeroplanes and one of our seaplanes, each of which mistook the other for the enemy. Having witnessed the fray, our anti-aircraft gunners turned their fire on both and in the vain attempt to bring them down managed to damage the tower of Walmer Church and injure some of the men in barracks. They were now given to understand that things were going to be better, and that might be so because they could not possibly be worse. He asked whether after 18 months of war we had a sufficient number of fully-trained air pilots and air gunners to man the machines which the Munitions Department had now provided. He wished to know whether our teaching school had fully-trained pilots to take up young gunners for instruction and whether there was a sufficient supply of aeroplanes for the purpose. Were there properly equipped repairing sheds and were there healthy quarters for the men? He believed there were none of these things. The Government had said that

they were preparing suitable landing places in the neighbourhood of London, but were there any night landing places being made ready on the East Coast and in Kent, elsewhere than in the London district? Only yesterday when walking near some open ground which had been chosen as a landing place in a certain part of Kent he found that the land had only recently been ploughed up. Then could the Government tell the House how it was that our anti-aircraft guns at Dover only fired percussion shells recently, shells whose efficiency depended on direct hits? He believed that the danger of hostile aircraft raids would be largely decreased if our airmen were given a fair chance to live. The enemy came over at a great height in the daytime in the sunlight and were, it might be said, unseen until they began to fire their bombs, and so our men had no time to ascend. If our airmen could receive earlier news of the approach of the enemy they would be in a better position to meet him. Flying was only possible on certain days, and he thought there should be air patrols on the other side of the Channel on suitable flying days. If we had also such patrolling on our own coast there would be proper warning, and then London and the Midlands might consider that the heroism of our airmen would protect them against Zeppelins and other aircraft.

### No Inquest on Walmer Victim.

HOLDING that where death is due to an act of war, an inquest is not necessary, the coroner for the Deal district has decided not to hold an inquiry relative to the death of the youth who was killed in the raid on Sunday.

### Fatality with Zeppelin Souvenir.

THAT great care should be taken in handling any souvenirs left by German raiders in emphasised by the recent fatality in Lincolnshire. It appears that after the last raid a young man picked up a detonator from a Zeppelin bomb, and when subsequently twirling the propeller the charge ignited, blowing him to pieces and seriously injuring his sister.

## The Sperry Automatic Pilot.

THIS is the name which the Sperry Gyroscope Co., Ltd., whose headquarters in this country are at 15, Victoria Street, London, S.W., have decided to adopt for their device, which has hitherto been known as the "Sperry Gyroscopic Stabilizer."

## The Midland Flying School.

IT'S an ill-wind, &c., says the old proverb, and, as will be seen from announcements which have appeared elsewhere in "FLIGHT," the recent gales which caused considerable damage at the Billesley Aerodrome have provided an opportunity for a reorganization of the Midland Flying School. We understand that the management is now in the hands of Mr. Horace C. Wright, and there are vacancies for several pupils. Full particulars regarding the equipment, &c., of the school, which is conveniently situated close to Birmingham, can be obtained from the secretary, Midland School of Flying, Billesley Aerodrome, King's Heath, Birmingham.

## Fatal Accident at Brooklands.

WHILE making a flight at Brooklands on the afternoon of the 20th inst., a machine, piloted by a pupil, Mr. Radcliffe, apparently banked too steeply in turning and fell from a height of 300 feet. In falling it struck the front of a cottage. The pilot must have been killed instantly; the wreck burst into flames.

## A Licence Refused.

A CURIOUS although quite consistent result to an application for the renewal of a licence for the "Abercorn Arms," Great Stanmore, came about on Thursday last week. In giving their decision, the Justices for the Gore division of Middlesex stated:—

"In these circumstances we have to decide whether Mr. Weisenger is a fit and proper person to hold a licence of the strategic position of the 'Abercorn Arms,' situated as it is on the side of the hill overlooking London and the Hendon Aerodrome. There is no doubt that the 'Abercorn Arms' is in a position which renders itself readily to the collection of information, and also to the communication of information by signal. The German system of espionage is so far reaching and so marvellously subtle in its methods that it would be difficult for us to take too many precautions against it. We are at war with Germany, and Mr. Weisenger is of German origin, and would naturally sympathise with the rulers of the land in which he was born, notwithstanding that he has been naturalised here, and taken an oath of allegiance to our King.

"Our view is that naturalised aliens of hostile origin are no more likely to be friendly to this country than unnaturalised alien enemies, and in the national and public interest, however hard it may be to the licensee, we feel we must protect the public interest, and must decide, as a matter of fact, that in all the circumstances Mr. Weisenger is not a fit and proper person to hold the licence of the 'Abercorn Arms.' We, therefore, refuse to renew the licence so far as he is concerned."

## Punished for Zeppelin Hoax.

RIGHTLY taking a serious view of the offence, the West Bromwich magistrates imposed a fine of £5 and £2 9s. costs, with the alternative of one month's imprisonment on H. P. Smith, an engineer employed at a controlled establishment for falsely stating that he had received a telegram from a brother in an adjacent town saying "Zeppelins are over here." This resulted in considerable alarm among the workmen at the factory, and on making enquiries the police found it was a hoax.

## British Prisoners Refuse to Build Zeppelin Sheds.

AMONG the stories told by wounded British prisoners of war, who passed through Flushing on their way to England, the *Times* correspondent records the following:—

"A working party was sent to North Germany, and on arrival found that they were expected to construct Zeppelin sheds. They refused, and eight men were consequently sentenced to 12 months' imprisonment with hard labour. They appealed and the case is to be heard in Berlin. Meanwhile the sentence holds good."

## A Seaplane Picked Up.

ACCORDING to the *South Shields Gazette* Captain Blain of the steamship *Framfield*, from Methil to Rouen, reports that on Wednesday the 9th inst., he picked up a seaplane which was floating bottom upwards in the North Sea, and delivered it to the military officer at Rouen.

## Wrecked Zeppelins.

IT is always necessary to be wary in accepting stories about disasters to Zeppelins, but the *Morning Post* correspondent in Amsterdam reports that he has obtained, indirectly from Brussels, confirmation that a Zeppelin was destroyed near Ligne. The *Journal des Debats* in Paris has also received a letter from Brussels, dated February 2nd, reporting that a Zeppelin had just been destroyed at Mainvault, near Ath, all the crew being killed and several other people being killed and injured by the fall. It is added that the German authorities were doing their utmost to hide the loss, and were refusing all passports for the scene of the accident.

## Zeppelin Wrecked at Friedrichshafen.

AN Exchange message from Zurich on Monday reported that, according to a report from Schaffhausen, one Zeppelin was wrecked in last Tuesday's storm at Friedrichshafen and another damaged.

## Raid Rehearsals in Germany.

THAT even German thoroughness in organisation does not always work well, even in rehearsals, is shown by the following Exchange message from Berne:—"Aeroplane raid rehearsals continue to take place at Karlsruhe, Stuttgart, Constance, and Strassburg. The *Strassburg Post* complains of the fiasco which attended a mock raid alarm in the city. It seems that the bellringers forgot to ring the cathedral bell, and, though the alarm was given in other ways, the public took no notice, and the policemen, instead of carrying out the necessary instructions, remained unperturbed at their usual posts."



"Life is a mirror—smile at it and it will smile back; frown at it and it will frown again."

## Expert Opinion.

THE late Henry Beach Needham, the flying expert who was killed with Lieutenant Warneford in France, was often consulted by aeroplane inventors.

An inventor from Seattle submitted a triplane model to the brilliant young expert last spring. Mr. Needham studied the model attentively for an hour. Then he laughed and said:

"I'd advise you, my friend, to try your hand now at inventing a submarine for one of the belligerents."

"Yes?" said the inventor, puzzled.

"Yes," said Mr. Needham, "for, judging from this aeroplane model, I am convinced that a submarine designed by you would fly."—*Washington Star*.

A DOCTOR advises weak and elderly people, on the approach of Zeppelins, "to talk on cheerful subjects." As, for example, on the subject of our air defences?

ACCORDING to Berlin, no Zeppelin bombs are to be dropped on Stratford-on-Avon. Naturally we should expect the Kaiser to have regard for the safety of the lady who has shown so much sympathy for "The Sorrows of Satan."

To meet the claims of Air Defence and Commerce, two more ministers may be added to the Cabinet. But, as Mr. Asquith said, we must be prepared to endure anything.—*Whipped Topics*.

BLACK (standing on stern of airboat): "I don't see how these second-class passengers can sleep."

BLUE: "I bite."

BLACK: "Well, the propeller makes such 'awake.'"

PASSENGER: "Does the airship tip much, sir?"

STEWART: "No, it resembles the passengers in that respect."—*Pitt Panther*.



# Models

ALL communications in connection with this section should be addressed to the Model Editor, "FLIGHT," 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

## Scale Models v. Flying Sticks.

MR. JAS. C. BALDEN, the well-known hon. secretary of the Scottish Aeronautical Society Model Aero Club, sends the following contribution to this discussion:—

"I have read your various interesting articles on the above subject, and feel I would like to make a few remarks on same.

"In a recent copy of 'FLIGHT' (December 24th, 1915), one of your correspondents makes the statement: 'As to any real advance I think that model aviation work has reached its highest point.'

"This is, I consider, not at all the case, the model aeroplane being a long way from finality of design, &c., as yet.

"I am convinced that the highest state of perfection the model aeroplane will attain will be the Wireless Controlled Model, the power being other than rubber or compressed air—in fact, a motor that generates power. I showed in 'FLIGHT' on July 2nd, 1915, a method I arrived at for controlling a model aeroplane in flight by wireless. The missing factor was, however, the motor, as there is not, as far as I am aware, a motor (petrol) suitable for aeronautical purposes on the market, capable of running for ten minutes and over on end.

"I do not profess to be an expert as regards engines, but I do not think it is the impossible to make a suitable engine, as regards weight and size, &c., capable of flying a 5 ft. to 7 ft. span model, and running continuously for the time mentioned and over. I am sure many aeromodelists do not fully realise the immense possibilities of such a model, which is now quite possible, bar the motive power, therefore let us to work and build a motor.

"As regards 'flying sticks,' these I consider will always to a

"Beyond, however, the use of such models for these purposes, I think they should be left alone, as along the lines of the 'flying stick' no progress of any use at all can be obtained. How many aeromodelists know to their cost that the larger, and therefore also the heavier, a model is the greater certainty there is of a smash taking place on landing. It is well known to all who have done any model flying that the smaller model encounters less smashes than its larger brother. Then again, money in some cases is undoubtedly a consideration against the building of large flying scale models.

"I do not, however, wish to convey the impression that I do not encourage large machines after the full-size design, but merely wish to point out what I think are some of the reasons for the flying scale model being so largely left alone by model aero clubs in this country.

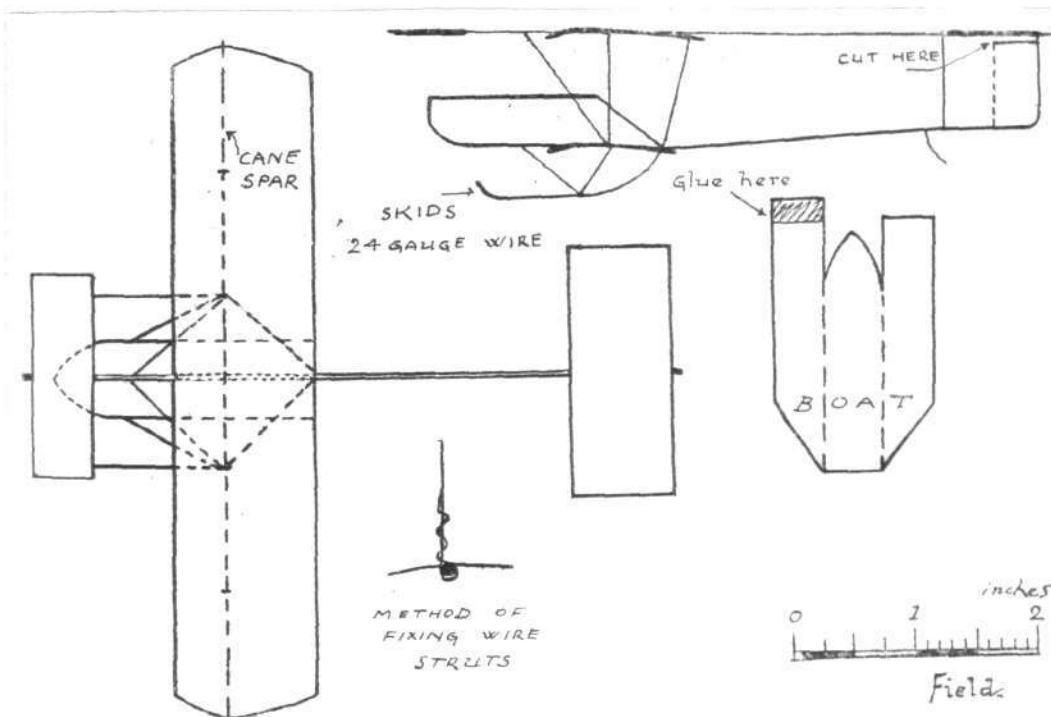
"In fact, to put it into words, one is looking for trouble when one commences such a model, but surely we have enough patience and grit to stick it and make them fly in time, as well as the 'flying stick' has done. "Let us hope so."

## A Paper Biplane Glider.

From Colehill, Warwickshire, Mr. Cyril Field sends the following notes on paper gliders:—

"Seeing many suggestions in the Model pages of 'FLIGHT' that greater interest should be taken in 'scale models,' I enclose drawings of a model glider which, though not a model of any particular machine, can, I think, come under the class of 'scale models.' The performances put up by this glider are, I think, exceptionally good for its size; flights ranging from twenty-five to thirty feet on the level.

"The outriggers and spars are made of split cane, while the



Drawings of Mr. Field's paper biplane glider, which has given very good results.

certain extent remain a necessity of all model aero clubs, even if it only be for the junior members.

"When one commences making models one never makes for a first model a nice covered-in fuselage tractor r.o.g., but a simple model, consisting of a single stick, two planes, a propeller, and some rubber. This is, I think, only right that the beginner should progress through all the various types to r.o.g.s., and later on to tractors, &c., as if a beginner starts with a very fine tractor, ten to one it gets smashed at the first attempt to make it fly, and naturally the beginner is very apt to be discouraged by seeing all his many hours of labour go to ruin in perhaps as many seconds. It is better by far, I consider, that the beginner should begin at the beginning, and, therefore, I argue that 'flying sticks' are yet most useful to model aero clubs in the training of the model flyer of to-morrow.

inter-plane struts and landing carriage are of wire; the planes are of paper and slightly cambered, the lower main plane being smaller in span and chord than the upper plane.

"If ballast should prove necessary this can easily be hidden away in the nacelle. The machine that I used, when I obtained my greatest successes with this type of glider, was double the size of the one from which the drawings are taken.

"I have not confined my energies entirely to gliders, but have made many models with elastic motors. However, although I have got the centre of gravity in the centre of the main planes, the machines persist in 'stalling,' even when the elevator is horizontal. I have moved the c.g. both backwards and forwards, but with no better results. Since I am only a beginner in model building, I would be very glad if any readers could give me an explanation."

